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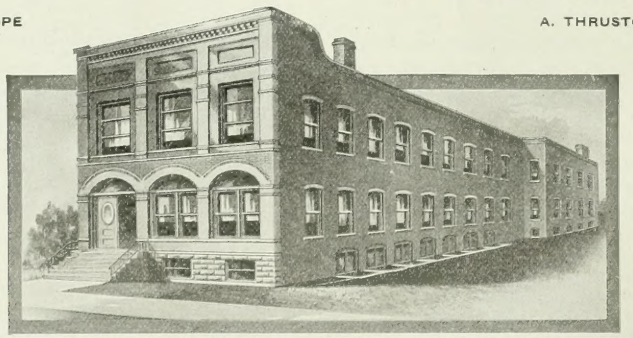

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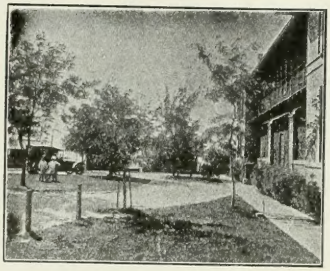

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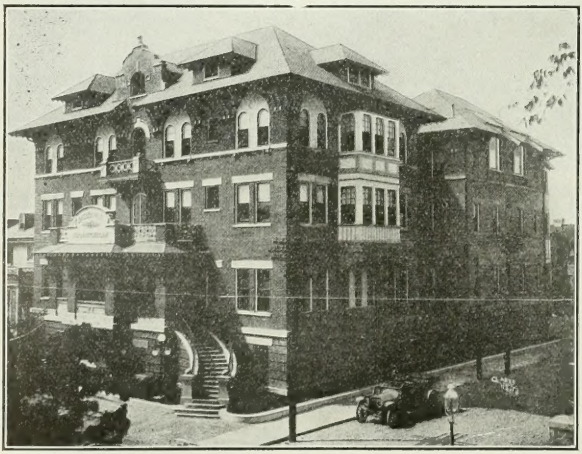

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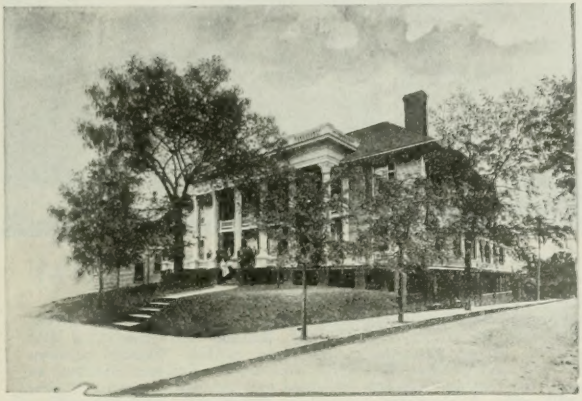

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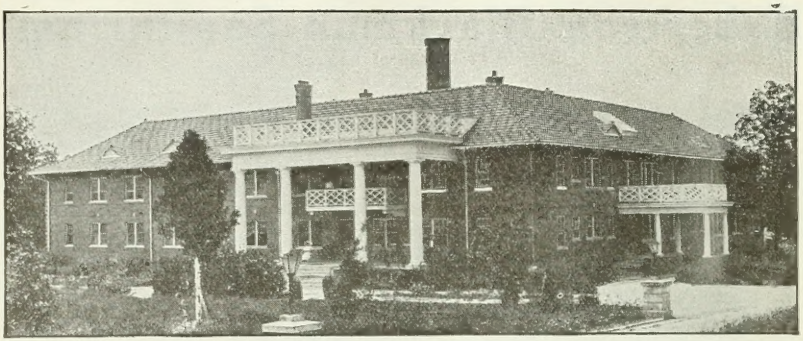

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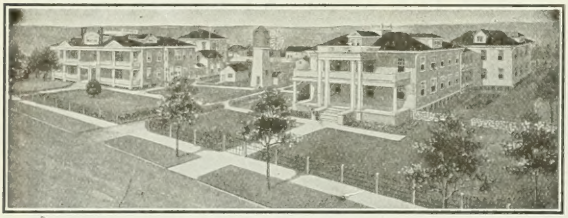

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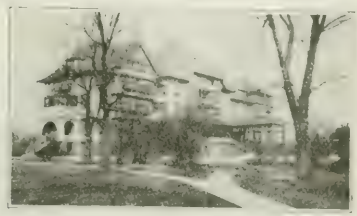

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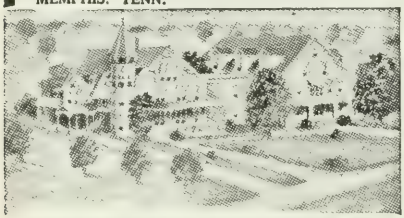

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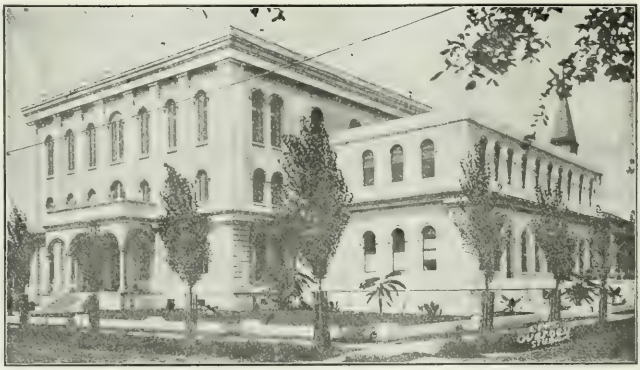

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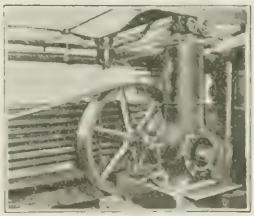

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Volume XII MAY 1919 Number 5

MEDICINE

INTERNAL DISEASES, PEDIATRICS, NEUROLOGY, DIAGNOSTIC METHODS, ETC.

EPIDEMIC ENCEPHALITIS

By Walter C. Allen, M.D.,
Chicago, Ill.

Epidemic encephalitis, better known as encephalitis lethargica, the name given it by Von Economo, of Vienna, presents the characteristics of an acute infectious disease occurring in epidemic and possibly in pandemic form. It is characterized clinically by pyrexia, somnolence and asthenia. Anatomically, the disease seems to localize in lesions of the central nervous system, more particularly in small foci of sub-acute inflammation in the substantia nigra and spreading toward the ganglia of the base and to the gray matter close to the ventricle in the protuberance and the bulb (Marie).

Von Economo described the entity before the Vienna Psychiatric Society in April, 1917, his study having been based upon cases which arose in Austria during the latter part of the preceding winter. Von Weissner, working with material from the same epidemic, has reported the discovery of a gram-positive diplo-streptococcus in cultures from this material. He reproduced the disease entity in monkeys which he had inoculated with an emulsion of the brain substance from these cases and by injection of pure cultures of his gram-positive diplo-streptococcus. The efforts of other investigators to duplicate the findings of Von Weissner were not successful. This failure on the part of others may be explained in part by the comparatively few cases observed, the short duration of the epidemic and the disturbed conditions in scientific research, particularly the difficulty in transmitting scientific information quickly to the rest of the scientific world.

Commencing in January and continuing through April, 1918, 164 cases were reported in Great Britain. In the British Isles the disease was at once made reportable. An intense study of these cases, especially as to etiology, was made by the Medical Research Committee and was summarized in a report to the Local Government Board. The committee, by bacteriological methods adopted for studies of bacillus botulinus of Von Ermingen and to the filterable virus of acute anterior poliomyelitis, decided that neither botulism nor poliomyelitis were etiological factors.

An epidemic simultaneous with that in Great Britain but extending into the spring and summer, also occurred in France. A. Netter reported 54 cases which he had collected from the French epidemic with smaller numbers of cases reported by other French investigators. Three cases were reported from Montevideo, and Dragotti and others in Italy reported puzzling cases which they attributed to the same cause. What apparently was a similar epidemic was reported in the *Medical Journal of Australia* for March, 1918. The Italian investigators were inclined to consider the epidemic as identical with nona, which was reported from Italy and Hungary in 1890, following the epidemic of influenza. Lethargy was such a striking symptom in the influenza epidemic of 1712 at Tubingen that it was popularly known as "sleeping sickness," just as the present epidemic of encepha-

litis has come to be popularly known by the same term. Many investigators suspect the toxin of the causative organism of these epidemic influenzas, localized in the brain and causing encephalitis, as the etiological factor.

Neal, at Willard Parker Hospital, New York City, has discussed the resemblance of a case of influenza, showing lethargy as a complication, to epidemic encephalitis. The cases seen by Bassoe and Tieken, in Chicago, and by Porthier, at Camp Lee, gave in many instances histories of having had influenza during the recent epidemic. This may be merely a coincidence.

As noted above, the causative factor is undetermined. The findings of Von Weissner are interesting and would become significant if duplicated. In epidemic encephalitis the inoculation of emulsions of brain tissue from cases into monkeys is the procedure which would seem to give the best prospect of obtaining data as to etiology. One can not fail to associate the recently described disease, acute infectious polyneuritis, investigated by Bradford, Bashford and Wilson, in England, as an entirely new disease, with epidemic encephalitis. Bradford, Bashford and Wilson studied thirty cases, characterized by acute onset, followed by paralysis, sometimes ascending, sometimes progressive, and always accompanied by neuritis. They found a pleomorphic organism in the brain tissue. Inoculations of emulsions of this brain tissue and of pure cultures of the organism produced similar symptoms in monkeys. So far as is known the work of Bradford, Bashford and Wilson has not been as yet substantiated by other investigators.

In connection with Von Weissner's report that he isolated a gram-positive diplostreptococcus in the cases studied by him, one is led to consider whether in this new disease entity we have further substantiation of the monumental work of Billings and Rosenow on focal infections due to streptococci. Have we by chance a streptococcosis with localization of toxin or organism in brain tissue, causing encephalitis?

The linking of the acute infectious polyneuritis of Bradford, Bashford and Wilson with the epidemic encephalitis of Economo is justified when we remember further that the virus of poliomyelitis, which must always be considered in the differential diagnosis of this new encephalitis, may localize at different points and produce such divergent phenomena as encephalitis, polyneuritis, meningitis, cerebellar ataxia and peripheral facial paralysis. This localization phenomenon leads us to consider whether in these new neurological diseases we are not dealing with identical or closely allied viruses with affinities for special tissue in the central nervous system. The fact that both in the present epidemic and in that of nona in 1890 we deal with diseases of similar characteristics, which seem to burn themselves out in brief epidemics before the etiological factor can be established, makes it imperative to consider whether or not an ultramicroscopic virus is concerned.

As to pathology, the characteristic lesions noted by Marie have been described above. The careful studies of Bassoe in this country recently reported tend to confirm the findings of Marie. Netter reported that necropsy in some of his cases gave evidence of a diffuse intertitial encephalitis, while the microscopic lesions suggested those of trypanosome sleeping sickness of Africa. The absence of meningeal reaction, as indicated by the large number of cases showing normal cell counts in the spinal fluid, tends to distinguish the disease from poliomyelitis. The frequency of strabismus, diplopia, loss of light reflex and accommodation, and frequently, photophobia, indicate a localization of the lesion in or about the nuclei of the third cranial nerves. Professor Marinesco, of Bucharest, who studied the pathology of a great number of these cases of epidemic encephalitis, concludes that histologically the cases belong to the class of inflammatory polioencephalitic conditions. Macroscopically, he adds, the brains show only meningeal congestion, while microscopically both gray and white matter show punctiform hemorrhages. Motor cranial nerves seem to be involved, he observes, while sensory nuclei escape. The gray matter is the site of perivascular cellular infiltration. He reports parenchymatous alteration in the shape of nerve cell degeneration and actual neuronophagia, as in poliomyelitis, but notes that these changes are far less extensive and destructive than in poliomyelitis.

Epidemic encephalitis should be considered in a case the presenting symptoms of which are pyrexia, asthenia and lethargy. Recent attacks of influenza should be noted. Prodromal symptoms of catarrhal conjunctivitis, tonsillitis, overpowering drowsiness, fainting spells, dizziness, pain about the eyes, blurred vision, diplopia, headaches, giddiness suggesting a hysterical stage, mental depression suggesting melancholia, restlessness and irritability in children, fatigue and vertigo should be looked for. The onset is apt to be insidious, but may be sudden. There is a gradually increasing lethargy, which may go on to coma-like states. The face is mask-like. The patient lies flat on the back. Voluntary movements seem impossible. Sometimes the condition resembles catatonia and limbs placed in awkward positions may be maintained in those positions. There may be a resemblance to delirium with chattering and mumbling. Usually, there is some muscular rigidity. Rigidity of the jaw muscles may be marked and frequent, even when none or few of the other muscles are rigid. If able to speak, the speech is apt to be nasal, monotonous, stereotyped. There is usually a temperature of 100 to 101 F., but it may be as high as 104 F. for a brief period. The stupor may last for from two to three days, to from two to three months. Bilateral ptosis, strabismus and nystagmus may be present. Constipation is the rule.

An overpowering drowsiness or a coma-like state may be the presenting symptom. Generally, uremia, alcoholism, diabetes, morphinism and apoplexy may be quickly ruled out as the etiological factor. The presence of a local paralysis, such as third nerve palsy (and this latter is a surprisingly frequent finding) accentuates the possibility of an encephalitis. Albuminuria will not be present except as a coincidence. Spinal fluid may show no increase in cells and may be negative, although the Lange colloidal gold test has frequently shown some degree of positive reaction in these cases. Epidemic cerebro-spinal meningitis, in distinction from epidemic encephalitis, usually shows an intense meningeal reaction, as represented by the great increase in cells, and the diplococcus of meningitis is usually found in smears. Hysteria and dementia præcox must be considered in the differential diagnosis. As a matter of fact, it is much more difficult to differentiate epidemic encephalitis from these two conditions than it is to rule out the encephalitic form of acute anterior poliomyelitis. Here, the presence of elevation of temperature should be a guiding factor. If the condition being studied is dementia præcox, careful study and observation, with especial attention to family and past history, and a reaction in the Lange colloidal gold test indicating dementia præcox, may clear up the case. Narcolepsy (sudden, brief spells of sleep) rather than lethargy lasting several days, weeks or even months, are characteristic of hysteria. If pure malingery is suspected, the withdrawal of food and water, inducing intense thirst and hunger, is decisive. A malingerer can not stand such heroic measures. All reflexes as a rule are present, including the corneal reflex. Having finally decided that the condition is an encephalitis, all other forms of encephalitis should be considered before deciding that a new disease, epidemic encephalitis, is present. It is not believed that such pathologic histologic findings as have been noted in these cases are sufficient to justify the belief that a previously unknown type of encephalitis has been differentiated.

The theory that the cases reported as epidemic encephalitis represent a localization in the central nervous system of influenzal toxin should be considered. Osler, speaking of influenza, says: "Among the more serious complications may be mentioned meningitis and encephalitis, the latter leading to hemiplegia and monoplegia." Speaking of acute encephalitis, Osler further says: "Other cases have occurred in the convalescence from the fever, particularly in influenza." Osler makes it plain that headaches, somnolence, coma and delirium may accompany any severe acute affection of the brain. It is recalled by Dragotti and others that encephalitis followed previous epidemics of influenza and cites that of 1889-1890. Netter thinks the coincidence of the two diseases casual. Sainton cites the similarity of onset, the purulent rhinopharyngitis and long period of weakness during convalescence characteristic of both.

As to prognosis, it may be noted that the mortality has been placed at about 30 %

of the cases. The following table gives an indication of the mortality:

	Cases	Deaths
British cases	168	37
French cases (Netter)	15	7
Austrian cases (Von Economo and Von Weissner)	24	8

Complete recovery has been the rule in those cases which survived. Claude describes a case in which three months after recovery from the acute stage, apathy and impaired memory were still present. Death ensues in fatal cases from respiratory failure. It is impossible to suggest any special prophylactic measures.

As to treatment, hexamethylenamine has been advised. Convalescent serum, injected intraspinally, of patients who have recovered from the disease, might be suggested, but the cases are so few and so scattered that the suggestion has little practicability. Serum of persons convalescent from influenza might also be tried, but the gunshot character of such therapy is apparent. The patient should be placed on an air or water mattress and his position frequently changed. Skillful nursing, including careful record of water and food intake and attention to bowels and bladder, is essential.

Brief notes on a case in which a provisional diagnosis of epidemic encephalitis was entertained, but in which there was a strong suspicion of hysteria as the etiological factor, are appended:

CASE REPORT

A young man, 28 years old, married, American, farmer by occupation, had influenza in October, 1918. On March 28, 1919, while traveling on a railroad train, he experienced a sensation of general muscular weakness and drowsiness. On arriving at his destination he visited club rooms in the railroad terminal. A clerk in the club rooms noted that he seemed to talk and walk normally, but the patient said that he felt sick and wished to stay until he felt better. He became increasingly drowsy and lapsed into a state of semi-consciousness, and in a few hours was in an apparently comatose state.

When seen by a physician he appeared like one in a deep, quiet sleep. The cause of the condition not being known, all the procedures usual in an emergency of this sort were carried out, including thorough washing out of stomach and examination of its contents and catheterization and examination of urine. Respirations 24, pulse 100, temperature 101° F. No albumin nor sugar in the urine. Pupils dilated. Breath not alcoholic. Respirations not stertorious. Spinal fluid not under pressure; no cells in 18 c. c. centrifuged specimen; no sediment; Fehling's solution not reduced in 24 hours; Noguchi positive; Nonne positive. Eyelids closed. Pupils react to light and accommodation. Slight wince on deep supraorbital pressure. All reflexes present. No Kernig, Brudzinski nor Babinski sign. No ankle clonus. No rigidity of muscles except jaw muscles. No catatonic response on raising arms. Larynx occasionally moved as in swallowing. Heart and lungs normal. The body had a generalized ichteric tinge of mild degree. The face was mask-like. During the first two days he was aroused four times and partook of milk. On the third day he regained consciousness, called, or rather motioned, for pencil and paper and wrote the name and address of his wife, the address of a relative in the city where he was being treated and asked for water. Apparently, he was unable to hear or to talk. After brief periods of consciousness he would again lapse into periods of somnolency. On the eighth day, in the presence of relatives, he was able to talk and could hear so that he answered questions. He said that he remembered nothing of the experience he had been through and that the last he remembered was being on a train. During the following days he complained continuously of extreme muscular weakness, but was able to change his position in bed. After regaining speech and hearing he seemed clear mentally, and no paralyses were to be noted. The patient had been en route to perform what was to him very distasteful duties, and it is thought that this may have introduced a hysteric state. These notes are given to warn against a too hasty diagnosis of encephalitis. It is felt that in this case there was not sufficient evidence to call it such.

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THE DIAGNOSIS AND TREATMENT OF ACHYLIA GASTRICA*

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By the term achylia gastrica is meant in the broad sense those cases in which the expressed gastric contents, removed fifty to sixty minutes after the Ewald-Boas test breakfast, show an absence of free HCl. A more intensive study of the condition, however, forces us to make many distinctions. In all cases of achylia, the contents of the stomach after an Ewald-Boas test breakfast, have a very characteristic appearance. The bread shows little change, appearing very much as it did when eaten. No chymification has occurred. A small amount of thin water-like secretion is present. In some cases the rennin and pepsin enzymes are persistently absent, while in others both ferments are present. The total acidity is very low in some instances and quite high in others. Some cases show absolutely no admixture of mucus, while others present a large quantity of intimately mixed stomach mucus. All the above-mentioned chemical variations have an important bearing upon the nature of the achylia, as will be shown later.

Furthermore, achylia was noted to occur in various diseases, such as carcinoma of the stomach, certain forms of chronic gastritis, as well as in the later stages of nephritis, typhoid fever, pernicious anemia, pellagra, tuberculosis, syphilis and other general diseases. The condition was moreover found to be present in individuals appearing to be in perfect health. In other cases, the achylia *per se* appeared to cause severe symptoms, such as loss of weight, cachexia, anemia and diarrhea, symptoms which were often corrected by appropriate dietetic regime and the administration of dilute hydrochloric acid.

Another rare type of case deserves mention, viz., that designated as heterochylia. By this term, we mean that nervous individuals will sometimes show a complete absence of HCl in the stomach contents, while that at other times a normal or even a hyperacidity may be determined.

From the foregoing it will be understood that we are dealing with a very complex problem. Many investigators have attempted to solve it. One of the most noteworthy attempts is the brilliant work of Rehfuss, of Philadelphia. He devised a tube known commonly as the Rehfuss tube, modeling it after the duodenal tube of Einhorn. The bulb and openings are large enough to permit the passage of quite large food fragments. The rubber tube is small in caliber, so that it may be retained in place for hours without irritating the pharynx. This method is now designated as the fractional method of securing gastric contents. The standard test breakfast that has been finally adopted consists of one pint of thin oatmeal gruel to be taken after the tube has been swallowed. The gruel is prepared as follows: Four heaping tablespoonfuls of oatmeal to a quart of water to which is added a pinch of salt, and this is boiled down to one pint. Serve warm. At fifteen-minute intervals from 15 to 20 c. c. of the contents are withdrawn with a glass piston syringe and examined separately. Rehfuss demonstrated that some cases show a total achylia throughout the entire phase of digestion. These he designates as "true achylias." In spurious or false achylias some secretion of HCl or the ferments is demonstrable usually in the later stages of digestion, from one to two hours after the ingestion of the test meal. He also differentiates between a psychical achylia and a chemical achylia. His observations are based upon Pavlov's original experiments demonstrating the presence of a psychical secretion of gastric juice. In psychical achylia, the secretion of gastric juice, which occurs normally immediately after food is taken into the stomach, is absent. In two cases of true achylia, Rehfuss secured a temporary return of gastric secretion by the administration of parathyroid extract, thus demonstrating the influence of the endocrine glands on the secretion of HCl and gastric enzymes.

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We might proceed further and quote more authorities on the subject of achylia. Before the advent of the fractional method of examination, many crude opinions were held on the subject. Now, the majority of gastroenterologists are in accord with the essential features of the diagnosis and treatment of this condition.

It is obvious that no reliance can be placed upon the Ewald-Boas test breakfast. This test may be used as a routine procedure, but no diagnosis of achylia can be made without the use of the fractional method. If it has been demonstrated that HCl and the pepsin and rennin enzymes are absent throughout the entire phase of digestion, and that no stomach mucus is present, a diagnosis of simple, true achylia may be made.

The diet must be arranged to protect not only the gastric mucosa, but chiefly the intestinal mucous membrane. The cellulose and connective tissue, as well as the gelatinous envelope of the starch grain, can not be digested without the presence of HCl in the gastric contents. It is impossible to give sufficient HCl to supply the deficiency in achylia. Therefore, we must prepare these foods in such a manner that they can be taken care of by the small intestine. In other words, we must rely upon the vicarious action of the intestine and the pancreatic ferments for the digestive process. HCl is, therefore, administered as a stimulant to the digestive hormones.

Every effort should be made to improve the appetite and to formulate a diet that is high in caloric value. The fats must be emulsified. Therefore, one should give butter and cream freely. The fats contained in meats, particularly in bacon, must be avoided. The starches must be finely comminuted. All meats should be cooked thoroughly enough to gelatinize the connective tissue. Hence, boiling and broiling of meats should be continued until they are thoroughly done. Another principle in diet must not be overlooked, viz., that the citric and lactic acids are powerful stimulants to pancreatic function. Consequently fermented milk, orange juice and grape fruit juice are important elements of the dietary. The meat extracts, such as meat broths and soups, should be given freely, because of their stimulating effect upon the digestion and appetite. Careful and prolonged mastication of the food will correct many errors in cooking. I prefer to give the dilute HCl in fifteen- to twenty-drop doses, well diluted, and taken slowly after the meal.

Many of these cases present diarrhea as a complication. Careful study of the feces in such cases will usually demonstrate the presence of a catarrhal condition of the small intestine. Macroscopical examination of the feces will show an intimate admixture of finely-divided mucus. Microscopically, small islands of mucus and many leucocytes and occasional red blood cells are seen scattered through the field. Thos. R. Brown, of Baltimore, has recently demonstrated that such cases are not due to pancreatic insufficiency, as the diastatic ferment is present in normal quantities in achylia stools. Moreover, he demonstrated that the diastatic content in the feces is much lessened in chronic pancreatitis and is absent in extensive carcinoma of the pancreas. The diarrhea is usually corrected by appropriate diet and the use of small doses of dilute HCl. The presence of an inflammatory process involving the small intestine is one of the worst complications that can occur in achylia and explains the failure of the most careful form of treatment.

Constipation occurs in the majority of cases of achylia gastrica. In the uncomplicated cases, i. e., with a colon that is neither contracted nor atonic in character, a glass of strained orange juice given in the morning upon arising, is usually very effective. In the atonic forms, especial attention must be given to abdominal supports, carefully planned exercise of the abdominal muscles and the administration of finely ground agar agar. Each small particle of agar agar is converted into a small gelatinous cube which facilitates the passage of fecal matter through the colon without irritating the intestinal mucosa. The spastic form of constipation is amenable to treatment if one will remember that the spasticities are located in the lower third of the colon as a rule. Over one-half of them, as I have shown in a paper published some years ago, occur in the upper rectum, sigmoid flexure and descending colon. Enemata of 6 ounces of sterilized cotton seed oil given at bed time and retained through the night are

very efficacious in correcting the spastic form of constipation. Even more efficient are direct local applications of magnesium sulphate solution to the spastic segments through the sigmoidoscopic tube. The magnesia sulphate applied locally produces a reflex stimulation of the inhibitory phase of peristalsis, thus physiologically overcoming the hypertonic condition of the gut. Cathartics must be avoided, as nothing can be more disastrous than the constant irritation of purgation to a small intestine already damaged and overworked.

In cases where stomach mucus is intimately mixed with the gastric contents after the standard test meal, a diagnosis of anacid gastritis can be made. One type of such a condition has been designated by Pilcher as achlorhydria hemorrhagica gastrica. In these cases of gastritis we almost invariably find that free HCl and the enzymes appear in the later stages of digestion. This condition of chronic anacid gastritis is usually also present in carcinoma of the stomach as well as in the general diseases as above enumerated.

The differentiation from cancer is now readily made by the roentgen ray. Formerly, reliance was placed upon the presence of lactic acid, occult blood and Oppler-Boas bacilli. The Wolff-Junghans test for excessive albumin in the gastric contents was also useful in the differential diagnosis. Unfortunately, these tests are positive only in the late stages of the development of the cancer. Our only hope for an early diagnosis lies in the x-ray examination. As confirmative evidence of progress along this line, I might state that 50 % of our cases of carcinoma studied in the last two years show the presence of HCl in the gastric contents. Before this time achylia was the rule in nearly all of our cases, diagnosed as carcinoma. In other words, we are now able to make the diagnosis at an earlier stage, before achylia has resulted, thanks to the development in the technique of gastric x-ray diagnosis.

The treatment of anacid gastritis, whether primary or secondary to some general disease, is practically the same as that described above for the cases of total achylia. Referring again to the question of the administration of HCl, it has long been noted that some cases are remarkably improved by it, while others are not benefited. It has been my observation that the cases in which gastritis is present do not do well on HCl, while the true achylias respond beautifully to it.

The question of the achylia which occurs in pernicious anemia is an extremely interesting one. Indeed, it has been regarded by many authors as the primary cause of pernicious anemia, and treatment such as gastric lavage has beeen instituted. We know that achylia is an almost constant accompaniment of pernicious anemia. I recall but one case in which HCl was not absent. It was present throughout the entire course of the disease.

Achylia is really to be regarded as an incident in the development of pernicious anemia and is not connected with the etiology of this disease. A case of extreme interest illustrating this point deserves mention. The patient had been under my care for some years with dyspeptic symptoms. Her acidity was normal and at times even a hyperacidity was shown. Some three years after I had first observed her she developed a true pernicious anemia. During this illness it was demonstrated that she had a total achylia. After six months of illness, splenectomy was done. At the present time — five years after the operation — she is in perfect health and has completely regained her HCl and gastric ferments.

It has been stated that gastric hypermotility occurs in achylia. Dr. R. Walter Mills, who has recently made x-ray studies of motility in a large number of cases, comes to the following conclusions:

"In x-ray studies of gastric motility of cases of achylia gastrica, after a standard barium-fermillac meal of average volume, approximately 300 c. c., there is nothing to indicate that the time of total motility varies from that of normal subjects. Neither is there anything that suggests that pyloric tonicity is greater or less in achylia than where full gastric secretory power is present. In a series of 63 cases of achylia gastrica without organic lesions, the average time of total gastric motility in the different physical types was as follows: In sthenics, 4 hours, 19 minutes; in hyposthenics, 5 hours, 47 minutes; and in asthenics, 5 hours, 19 minutes, approximately the same motility times as in normal persons of the same anatomic types."

The reason for the assumption that hypermotility was characteristic of achylia was probably due to the fact that the gastric secretion was of such a character that but little of it could be secured by the stomach tube.

Some cases of achylia develop a severe form of secondary anemia. Therefore, the blood must be watched in all cases. Achylia patients rarely develop carcinoma or pernicious anemia.

The rules for treatment can be briefly summarized as follows: liberal diet as outlined above. Forced feeding must be resorted to in order to maintain a high degree of nutrition. The administration of small doses of HCl in selected cases. The juices of citric acid fruits and fermented milk and meat broths should form an important part of the dietary. Proper correction of constipation. Regular physical exercises must be insisted upon. The prognosis is good in all cases of achylia, many attain very good health, even 'though the acid never reappears. Chronic enteritis is a complication to be feared, inasmuch as the future health and life of the achylia patient depends upon the integrity of the small intestine.

A STUDY OF THE FUNCTIONS OF THE THYROID GLAND*

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Our interest in the thyroid gland followed observation of the results produced in persons suffering from diseases of this body. Being a ductless gland, there is not the ordinary way of ascertaining the nature of its secretion (if any) or its function. But observation and study of the condition of those suffering from an affection of the thyroid led to many experiments which have resulted in very definite conclusions.

The diseases of the thyroid, of most common observation, are goitre, Graves' disease, cretinism and mixedema, and often are associated with chlorosis, amenorrhea, obesity, eczema, hysteria, epilepsy, melancholia, adiposisdolorosa, lipomatosis and senility.

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In all diseases of the thyroid, the important thing to the sufferer is how much does it effect its secretions or what effect does it have on its function. A very large goitre does not always mean that there is a hypersecretion. In fact the swollen condition may arrest or retard the functions of the gland by a destruction of, or a compression on, its secreting tissue.

What is the result of a hyperthyroidia? A rapid heart's action, neurosis, arteriosclerosis, exophthalmic goitre, tendency to high fevers, excitability, heart failure, apoplexy, etc. In the hypothyroid variety, we have a slow heart, dull, apathetic mind, wrinkled skin, slow growth, myxedema, etc. How to determine a case of thyroid trouble, outside of these palpable cases, is of extreme importance.

That we have cases that baffle our diagnostic powers, goes without argument. May not many of them be due to a disturbed function of the thyroid? Let us see what part the thyroid plays in the economy of the body.

Sir Amroth Wright announced the theory that the opsonins of the blood was dependent upon the secretions of the thyroid gland. To prove this, Stepanoff and Morbi by many experiments showed the disappearance of the opsonins upon the extirpation of this gland. Thus we see at a glance that the thyroid protects us from infectious diseases, as we well know that the opsonins of the blood are the antagonists of all infectious organisms. For further proof, Charrin showed how dogs were easily infected by contagious diseases after extirpation of the thyroid. Greenfield, Murray and Lanz, after much study of persons suffering from myxedema, stated that they often died of tuberculosis or some other infectious disease. The protective role of the thyroid gland against infectious diseases is further evidenced, according to Roger, Garnier and Torre, by their observation of the fact that during an epidemic of typhoid without exception persons with diseased thyroids succumbed to the fever.

That the thyroid gland governs oxidation has been shown by Lorand and Moebius. For instance, a hyperactivity of the secretion, as in Graves' disease and fevers in which we have increased oxidation, is nearly always followed by an exhaustion of the thyroid function, a con-

sequent lowering of oxidation and the resultant obesity usually observed following low, continued fevers.

Not only does the thyroid protect us from infectious disease, but it also protects from certain drugs, especially alcohol and chloroform. De Quervain, Hertoghe and Sajous all showed by many experiments that animals with a healthy thyroid withstood alcohol without intoxication in much greater quantities than those with degenerate glands. This was also found true with chloroform. In fact, dogs which had their thyroids removed invariably died from chloroform narcosis.

The thyroid also has peculiar control of that function of the brain called the mind. Myxedematous people, as we all know, are apathetic, slow of thought and action, defective memory, dull and stupid. The wonderful effect of the thyroid upon the intellect has been many times demonstrated by the administration of the extract to cretinous children. They would grow brighter, learn faster and become more active in a very short time.

The thyroid also, as has been observed by many investigators, controls the sexual functions of the body. The sexual appetite is lowered or lost in those with diseased or degenerate thyroids. A full, well developed thyroid, in man or woman, is indicative of a keen sexuality. A stringy throat, a wrinkled neck is ofttimes positive evidence of sexual apathy.

The thyroid gland controls to a marked degree, as untold experimental evidence has shown, the digestive and metabolic functions of the body. As is further evidenced by those who have a marked disease of the gland, they are always people who seem poorly or improperly nourished.

Does the thyroid play any part in lunacy? I shall cite one instance. In a certain asylum in this country 100 cases out of 600 inmates have goitre. How many others have diseased or degenerate thyroids has no doubt never been looked into.

Let me also take up an important feature of the subject, thyroid deficiency. To determine a case of thyroid deficiency, or hypothyroidia, when it is not one of those well-known and well-marked diseases familiar to us all, is often difficult; yet its extreme importance should make us give each symptom of thyroid trouble very great weight, 'though other conditions may point to some different disease. A harsh, dry skin, excess of fat, waxy pallor, wrinkled hands, flabby muscles, premature grayness of the skin and hair, falling of the hair, especially in patches as in alopecia, poor appetite, dull mentality, melancholia, constipation, watery menstruation, sexual torpor, changes in the other ductless glands, increased tendency to auto-intoxication — these are some of the symptoms of a deficient thyroid.

And after studying these symptoms and also making a study of the functions of the thyroid, I came to the conclusion that pellagra was a disease caused by the deficiency of the thyroid gland. That the thyroid gland controls the digestive functions of the body and metabolism, has been proven by a thousand investigators. That pellagra is a disease of perverted metabolism, has long since been acknowledged by those who have made a study of this disease. The thyroid gland has peculiar control of the functions of the brain (the mind) and the nervous system. These functions are disturbed in a remarkable way, and to a remarkable degree in pellagra. The hair, the skin, the stomach, the bowels, the kidneys, the genito-urinary organs, all show a more or less diseased condition in well-marked cases of thyroidia. So do they in pellagra.

I came to the conclusion that pellagra was due to the lack of the proper function of the thyroid about April 1, 1918. Shortly after that I began to treat a case which illustrated my point.

Case No. 1.—Mrs. L. A. presented herself April 12, 1918. The patient, a female, white, age 32, had dark skin and black hair. Mouth red and sore. Stools, often bloody and offensive. Appetite, poor. Skin on back of hands crusted and red, also on back of neck, forehead, nose and chin. Mind, wandering. Continuous menstruation. Temperature, 103°. Pulse, 130. Trembling and weak; could not walk. Took little or no notice of anything or any one. Diagnosis, pellagra.

Treatment.—Hospital care and 5 grains of cacodylate of soda. Put her on 1-grain tablet of thyroid extract every three hours. Milk and egg diet with tea and malted milk. Continued this treatment for a week, giving the cacodylate every other day; then changed to the 7-grain ampule and the 2-grain tablets of thyroid every four hours. This was continued until she fully recovered, May 31.

Case No. 2.—On April 18, 1918, Hattie K., a Negress, age 30, presented herself. Ex. showed

flux; poor digestion; eruption on the hands, feet, neck and cheeks; sore mouth; weak and trembly; mind clear. She had been treated with 7-grain doses of cacodylate of soda for two weeks by another doctor without benefit. Diagnosis, pellagra. Gave her the same treatment as Case 1. Discharged June 18, cured.

Case No. 3.—On April 20, 1918, Mrs. G. B., age 50, came to me tottering in her gait; skin rough on hands, legs and neck; mouth, red and sore; appetite, good; bowels, loose; mind, hazy. Diagnosed pellagra. Gave the same treatment. Discharged June 30 greatly improved.

Case No. 4.—Mrs. L. E. B., age 28, white, came under my care June 1. She was tall and very thin. She suffered with flux; scarlet rash on hands to elbows; on neck in collar shape, on feet; mouth, sore; very weak and very tremulous; appetite, nil; mind, poor but sane. Diagnosis, pellagra. Gave her the same treatment. Discharged cured August 5.

And so on to Case 19.—Lily B., white, female, age 28. This was a remarkable case. Lily had influenza in October, 1918, from which she recovered. In December she went insane and was sent to the insane hospital at Tuscaloosa, Ala. There her case was diagnosed pellagra. Her relatives brought her back to me for treatment. When I saw her first—January 22, 1919 — she was badly demented; rough skin; no appetite; bowels loose; incontence of urine; amenorrhea and sore mouth. Diagnosis, pellagra. I gave the same treatment. Discharged March 10 sound in mind and body.

I have now under the same treatment five cases, all improving steadily. They are receiving the thyroid extract regardless of the condition of their strength or the action of the heart. If the heart is weak and the pulse accelerated, I increase early my cacodylate of soda to control the action of the thyroid extract.

These 28 cases have been treated on the theory that the cause of pellagra is a hypothyroidia, and with but a single exception all were cured. That exception was benefited. I have no authority to support my theory and can merely report the results of the treatment of these 28 cases as evidence.

AUTHORS' ABSTRACTS
Medicine

The Clinical Pathology of Mustard Gas (Dichlorethylsulphid) Poisoning. Geo. R. Herrmann, Ann Arbor, Mich. The Journal of Laboratory and Clinical Medicine, Vol. 4, No. 2, November, 1918, p. 1.

A study of the urinary and blood changes in some thirty soldiers gassed with mustard gas and presenting an interesting series from the most severe, the fatally gassed, down to the most mild type, which presented merely a conjunctivitis, revealed data of considerable value in the management of these cases. The mild cases of mustard gas burns of the skin or conjunctiva show no changes in the blood or urine. The moderately severe and severe cases with some involvement of the upper respiratory tract, at least after the first week, show definite clinical pathology. The urinary changes are those of acutely irritated kidneys, such as diminished output, increased concentration and acidity, albuminuria and diminished urea and chlorid output, with casts, renal epithelium, and red and white blood cells in the sediment. Under forced fluids the findings cleared up promptly. Coincident with the urinary changes the blood urea is found to be high, but approaches normal with the decrease in the kidney irritation. The blood showed at the end of the first ten days a slight secondary anemia, a polymorphonuclear leucocytosis, a definite eosinophilia, an increase in platelets and the appearance of myelocytes and young forms of leucocytes. No evidence of hemolysis. These changes indicate myeloblastic disturbance rather than erythroblastic. No leucopenia was noted in our examinations, which began on the tenth day after gassing. The leucocytosis reached its height coincidentally with the secondary infection and fell with the improvement of the infection. The T. P. R. charts showed in the severe cases an initial period of shock. With the development of the necrosis and secondary infection there is a corresponding febrile reaction. The marked generalized furunculosis was due to staphylococcus aureus. The secondary bronchopneumonia was apparently due to a streptococcus. The changes found could all be accounted for by the secondary infection in part and possibly by absorption of toxic products from the necrotic skin.

Our Harmless Flowers and Hay-fever Weeds. William Scheppegrell, New Orleans, La. Interstate Medical Journal, Vol. 26, No. 2, February, 1919, p. 129.

The characteristics of hay-fever weeds may be summarized as follows: They are wind-pollinated, very numerous, and the flowers are inconspicuous, without bright colors or agreeable scent.

The pollen of the golden-rod, daisies and many other flowers contain a substance which may produce a reaction in sensitive subjects. These pollens, however, are not found in the air as in the case of hay-fever weeds, so that the irritation can be caused only by direct contact with these flowers.

In the case of the golden-rod, which generates more pollen than most insect-pollinated plants, a room may be infected by placing these around in large numbers. Under normal circumstances, however, the pollen of the golden-rod or other bright flowers is never found in the atmosphere.

In spite of the summer form of hay-fever's being called "rose cold," the pollens of the roses are never found in the air and, therefore, do not cause hay-fever.

Among the flowers that have been listed among the hay-fever plants, but which are harmless, are the evening primrose, field daisy and dandelion.

The resin weed is blamed in Wyoming and the adjoining states for hay-fever. The pollen, however, is resin-like and does not appear in the atmosphere, and it is, therefore, harmless.

The principal hay-fever weeds are the common ragweed, Ambrosia elatior, and the giant ragweed, Ambrosia trifida, in the Northeastern and Southern states. In the Rocky Mountain and Pacific states, these are replaced by the wormwoods, Artemisias.

The grasses are the most common cause of the spring and summer hay-fever in all sections.

Report of a Case of Traumatic Infection Resulting from Influenza. M. H. Newman, Oklahoma City, Okla. The Journal of the Oklahoma State Medical Association, Vol. 12, No. 2, February, 1919, p. 45.

The case was a girl who had an infection of a simple cut of her face between the eye and the ear. After several days of ordinary treatment the infection apparently subsided and she improved. A few days later she had another chill, fever came up high and her face became swollen. The soreness and swelling extended over the mastoid bones. Despite all treatment, she kept on having chills and fever, 'though the swelling of the neck gradually subsided. A number of smears of the wound were taken for bacteriological examination. The three chief organisms found were the streptococcus, B. influenza (Pfeiffer), and a few of the pneumococcus. Those germs are rather unusual in a wound infection. Her sister had just recovered from a severe attack of influenza; they had occupied the same room; and those organisms evidently have influenced the course of the primary infection. The author used three injections of 1 c. c. each of mixed serobacterin in three consecutive days. The temperature went down in twenty-four hours after the first injection, and she made a good recovery.

Alveolitis Dentalis, Interstitial Gingivitis, So-called Pyorrhea Alveolaris, Localized Catarrhal Stomatitis. Suggestions As to Its Cause and Its Treatment. John J. McNulty, New York, N. Y. The Boston Medical and Surgical Journal, Vol. 180, No. 7, February, 1919, p. 177.

So-called "pyorrhea" is the last act in the pathologic drama of hyperemia, exudation and pus liquidation of tissues in and about the dental alveoli. This irritation, inflammation and destruction is, in the light of present understanding, a local expression of general body malmetabolism—a nutritional error that can only be approached intelligently and effectively by considering it a local manifestation of tissue perversion due largely to an auto-toxicosis, which has its beginnings and momentum in a lowering of the functioning of the "body auto-protective mechanism"—a hypo reaction of the interrelated and inter-dependent glands producing internal secretions and enzyms in physiologic association.

This reasonable and probably correct view of the cause can be demonstrated as true by the tissue betterment—nutritional improvement following the intelligent use of associated internal secretions and enzyms. This association of gland substances, desiccated preferably, if they are vital in quality when administered, should be given in seemingly ineffective small quantities, as vital associated internal secretions and enzyms, being catalysts, owe their effect and value to vitality rather than quantity.

Physically considered, man registers as is his "concentration and velocity of reaction.' Modern man seems to be expressing a lowered rate of reaction a sub-functioning of his "auto-protective mechanism." His mento-physical sub-efficiency is largely an expression of hypo-functioning of the inter-related and inter-dependent glands — the pituitary, thyroid, supra-renals, gonads and the glands forming the enzyme cycle, that is, the peptic, pancreatic, hepatic, enteric, splenic glands.

In the living animal organism, these vital entities (reactions or activators of reactions) are never commanded to go forward by the auto-intelligence to do their work, without the auto-intelligence sending with them the co-bodies or protecting and reinforcing forces. Therefore, internal secretions and enzyms are not destroyed by any reaction of the living animal organism, nor are they permanently inhibited by any inherent reaction.

Alveolites dentalis is physically prevalent, and this general error of metabolism, in the light of present knowledge, can only be properly and effectively met with the use of properly associated internal secretions and enzyms.

Study of the Intestinal Contents of Newly-born Infants. A. Hymanson and Max Kahn, New York, N. Y. American Journal of Diseases of Children, Vol. 17, No. 2, February, 1919, p. 112.

The study was conducted on fetal meconium. In the previous analyses reported by other investigators, there must have been some confusion between the true feces of the first two days of life and meconium. In the analyses of five specimens of meconium for inorganic constituents, it was found that the iron and calcium contents are similar to those of hunger feces, whereas the phosphorus is less and the sulphur is much increased. Traces of ammonia are present in meconium. In true meconium there was not found any uric acid, which fails to corroborate Weintraud's analyses. No trypsin, erepsin, lactase nor lipase was found in true meconium. Slight traces of amylase were demonstrable.

Bovine Tuberculosis in Children. R. S. Austin, Chicago, Ill. American Journal of Diseases of Children, Vol. 17, No. 4, April, 1919, p. 264.

This article consists of an analysis of twenty-four cases of tuberculosis in children with special reference to the bovine or human type of infecting organism in each case. The bovine type of tubercle bacillus was found to be the infecting organism in seven of these twenty-four cases. The primary focus was noted in twelve cases: in six in the right lung; in two in the

left lung; in three apparently in a peribronchial lymph node on the right side; and in one case in the intestine. The intestinal case and one of the bronchial node cases had bovine infections.

The corneal scratch test was consistently negative in rabbits with human type infection, but not always positive in bovine type animals. So this test was not very satisfactory.

Attention is called to the fact that although milk sold in Chicago is supposed to be pasteurized, there were seven cases of bovine infection out of twenty-four cases of tuberculosis in children, which may indicate the necessity of home pasteurization of cow's milk.

Focal Points of Infection Producing Toxemia. H. H. Roberts, White Sulphur Springs, W. Va. The West Virginia Medical Journal, Vol. 13, No. 8, February, 1919, p. 287.

One of the most important factors in the etiology of systemic disease is the result of some toxic material generated at some local focal point. Various locations of focal points of infection are found in the body. One of the most common causes is some infection of the teeth and the oral cavity, chronic inflammation of the follicles of the tonsils; and also the intestinal tract, all of which produce well-marked local and general symptoms.

It has been demonstrated beyond the experimental stage that many of the acute, and the majority of the chronic, diseases have their origin from the poisonous toxins developed within the body from some local focal point.

It is, therefore, of the greatest importance that a careful search be made which will often reveal a number of points of infection. Frequently there is a mixed infection resulting from a number of organisms.

The study and investigation of the exudates from local foci will invariably reveal the presence of various bacteria. In experimenting with various strains obtained from cultures made from focal points of infection, it has been shown that the same disease can be produced in the inoculated animal. Strains made from the exudates of patients with arthritis or rheumatic fever will produce arthritis. Strains made from patients with endocarditis will cause endocarditis to be developed. Strains made from patients suffering with pericarditis, myositis, cholecystitis, chronic arthritis, etc., have resulted in the production of the respective lesions in the experimental animal, thus proving beyond a doubt that many of these diseases have a specific source of development and that the primary source must have a focal point of infection.

In the focus of infection there are strains which seem to have a special affinity for certain tissues and organs of the body, such as the heart, arteries, serous membrane, etc.

In all cases of systemic infection, careful inspection should be made of the oral cavity and a radiograph of the frontal sinus, teeth, etc., should be made. A deep-seated tonsil filled with pockets of pus will reveal many systemic manifestations. The symptoms will disappear when the tonsil is removed.

One of the most important parts of the body which has been neglected is the intestinal tract. Careful search should always be made for toxic infection originating in the intestines.

After the cause of infection has been removed, much benefit can be secured by the scientific application of hydrotherapy. Special exercise in the open air followed by invigorating baths and dry rubs.

By the careful investigation of the cause of systematic disease many complications can be avoided, acute disease cured and chronic disease prevented.

What the Laboratory Can and Can Not Do in the Diagnosis of Tuberculosis. R. B. H. Gradwohl, St. Louis, Mo. The Journal of the Missouri State Medical Association, Vol. 16, No. 2, February, 1919, p. 35.

Gradwohl takes up the question of the laboratory diagnosis of tuberculosis. He discusses the bacteriology and serology of this disease in the fullest details and goes into the interpretation of the positive and the negative findings of the laboratory. The examination of sputum and urine for tubercle bacilli is carefully gone over. Due attention is called to the acid-fast bacilli found in sputum and urine. The guinea-pig test for renal tuberculosis is explained, the question of inoculation of several animals, the matter of permitting ample time to elapse for the development of the disease, the proper route for transmitting the disease to these laboratory animals. Allergic phenomena are quoted in full, the various methods of tuberculin injection for diagnostic purposes. The use of cultivation methods in isolating tubercle bacilli from sputum, pus, pleuritic fluid, urine, etc., are emphasized, particular attention being given to the Petroff medium which the writer has used with great success.

The complement-fixation test for tuberculosis is gone into at length. The writer believes that in this test there is a valuable method of excluding or including a possible tuberculous infection. He does not believe that the test can be used safely to estimate an "arrest" of a tuberculous infection. So far as the mechanics of the affair are concerned, he does not believe that there has been produced as yet the best possible antigenic extract. The best results were obtained by using a number of antigens prepared differently for each blood. Possibly the potato-grown bacillus with sodium hydrate extraction furnished the maximum of positives. The finding of a negative reaction does not exclude the existence of tuberculosis. Indeed in far advanced and almost moribund cases, the results were frequently negative, due to the fact that there are no resisting antibodies at such a time.

Through all laboratory methods we have valuable help in the diagnosis of tuberculosis. Clinical examinations and roentgenograms are of course vitally necessary in clearing up these problems. The careful clinician will avail himself of every possible aid and the laboratory furnishes such aids in almost every suspected case.

TROPICAL DISEASES AND PUBLIC HEALTH

GENERAL HEADQUARTERS BULLETIN No. 54 ON THE VENEREAL PROBLEM*

It can be said without fear of contradiction that the morals of the soldiers of the American Army are better than those of any army in the history of warfare. An annual venereal rate of 29 per thousand in the A. E. F., and 20 per thousand in the training camps in the United States, is unprecedented among soldiers, and so much better than that of the men who were drafted into the United States Army that the Regular Army surgeons speak of the "depravity of civil life."

The record that has been made in the remarkable reduction of venereal diseases in the Army has been brought about by the efforts of the Medical Department of the Army with the active co-operation of the General Staff, and the line officers who have control of the discipline of troops. Too much credit, however, can not be given to the Commission on Training Camp Activities, headed by Mr. Fosdick, which has been of great assistance to the Army in the intensive campaign of education to promote venereal prevention both among the soldiers and the civil population of the extra-cantonment zones in the United States.

While much has been accomplished in improving moral conditions in the Army, and among the civil population all over the United States, there is still far too low a standard of morality in civil and military life, and therefore a higher venereal rate in both than should exist in this age of enlightenment. However, the wonderful improvement in the morality of our soldiers should encourage all right-thinking men to strive and hope for even higher standards of living, not only in the Army, but among all the people of the United States.

Those who live in the past, "the old-timers," are still wont to say: "Young men are going to indulge in illicit sexual relations, and there is no use denying it, or trying to do anything to stop this age-long evil." Fortunately this class of reactionaries is growing smaller, and the progressive element, both among the laity and the medical profession, knows that a great deal has been done in practical venereal prophylaxis that has been based upon scientific facts and practical "commonsense" methods. They also realize that much greater effort is needed to protect the men and women of our country against the diseases that make soldiers unfit for fighting, fill insane asylums, shorten life, decrease birthrates, and altogether cause more misery and poverty than any other class of diseases.

G. H. Q. Bulletin No. 54 shows that the United States Army authorities have a rational viewpoint regarding venereal diseases, and that they understand the underlying causes. This Bulletin is an evidence of the fact that they are making an earnest effort to improve moral conditions among our soldiers. It will be far-reaching in its effect upon the morals of the men in the Army, and its bearing upon the vice problem in civil life will be utilized for years to come in the anti-vice crusades in American cities, because it places the United States Army squarely on record as recognizing the dangers of "regulated and inspected houses of prostitution."

VENUS AND BACCHUS

The relationship between alcohol and illicit sexual indulgence is recognized in G. H. Q. Bulletin No. 54, which says: "In the majority of cases drunkenness precedes and leads to exposure to venereal infection." Apropos of this is the remark that is credited to Sir William Osler: "Man worships at the shrine of Bacchus early in the evening; a few hours later he is enamored of Venus; and then he becomes a devotee of Mercury for two years." Total abstinence from alcohol would seem to be the moral that should be drawn from these observations by such distinguished authorities. It is just as well to state facts and say that the wisest course for the American Army officer or the private soldier of the American Ex-

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peditionary Forces to pursue is to abstain from wine and all other forms of alcoholic beverages if he would resist the temptations that surround him and go back home "clean" and free from diseases which may not only interfere with his own happiness and usefulness, but which may destroy the health, and even the life, of the woman whom he will marry in the years to come, or the one whom he has already vowed to honor and protect.

In the early months of the war, American soldiers embarking from New York were granted permissions of one or two days to see the sights of America's greatest city. Venereal inspection was held before embarkation, and those soldiers infected were not allowed to sail. So many of them contracted venereal diseases in New York, which developed before or soon after their arrival in France, that the leave privilege was taken away from the soldiers passing through that port. There was a marked reduction in venereal diseases following this action of military expediency, which many thought a hardship, but which increased the number of soldiers available for fighting. Experience at the ports of France was the same as in New York. (The Medical Bulletin, published by the American Red Cross, May, 1918, Vol. 1, No. 7, pp. 497-498.)

Observations regarding the incidence of venereal diseases among the American soldiers, particularly officers, has shown that Paris has been the source of infection for many men. On one occasion, nine officers spent one night in Paris. Seven of them contracted syphilis. A group of 45 soldiers spent 6 hours in Paris and 9 of them became infected with venereal diseases. These and many other similar incidents are vouched for by reliable medical officers. Men who become intoxicated neglect venereal prophylaxis, and the strangers in cities do not know where prophylactic stations may be found. It is a fact that in Paris, where young and sometimes older men "relax" after their arduous duties at the front, or in offices, the venereal rate is disgracefully high. These facts should be known to the men who visit this beautiful city. They should also be made to realize that in running unnecessary risks they may be *particeps criminis* in depriving others of the privilege of enjoying a visit to one of the most historic, as well as one of the most beautiful, cities of the world.

THE RESPONSIBILITY OF COMPANY COMMANDERS

Venereal prophylaxis is in reality as much of a problem for the line officers as for medical men. If the commanding officers of various units lead clean, sober lives and enforce the army regulations, there will be a low venereal rate among the men under them. If they have loose morals and are lax in discipline, they will have high non-effective rates from this class of preventable disease. Illustrating this is an incident that occurred in one of the smaller cities of France. The number of men on "sick report" in one company of a certain regiment was much higher than that of other units in the same organization. When the report reached the Division Commander he sent out through regular military channels an inquiry as to the causes for this high venereal rate in this company. The Battalion Commander returned the letter endorsed as follows: "The cause of the high venereal rate in Company ..... has been discovered and the remedy applied. Captain Z has been removed and Captain A has been placed in charge. Company ..... will soon have a low non-effective rate from venereal disease." Subsequent reports show that the venereal rate of this company depended largely upon the morals and discipline of its captain. To a great extent the responsibility of the morals of a unit rests with the commanding officer, and he should be held accountable for the loose discipline resulting in a high venereal rate among the men in his command.

VENEREAL DISEASES AND BIRTH RATES

The American soldiers (officers and privates) who have come to France represent the highest type of manhood in our country. They will be the fathers of the next generation of men and women upon whom great responsibilities will fall, and they must make up for the loss of the gallant soldiers who have died in the service of their country in this war. American soldiers, therefore, have no right to run the risk of becoming infected with diseases that may reduce our birth rate, or which may be transmitted to the children with whom it is their duty to re-

populate the land of their birth and pride.

The French regard their low birth rate as one of their most serious problems, and they fear a further reduction from the increase in venereal diseases that has occured in the past four years. Thibierge, in his book *"Syphilis et l'Armee,"* published by Masson et Cie, Paris, 1917, quoting from Poutrier, says: "If one admits the very probable number of 200,000 cases of syphilis (in the French Army) and attributes to each of these cases the production of only two abortions, he sees that syphilitic infections will cost 400,000 births, or the equivalent of two yearly classes of soldiers." This does not include the sterility due to salpingitis and orchitis from gonorrheal infection.

EDUCATION THE REMEDY

Medical officers in the American Expeditionary Forces should impart these facts, and others which they know regarding venereal diseases, to every soldier in each branch of the service. The same kind of a campaign of education should be carried on at home until every American man and boy has learned the truth, that the prostitute, whether registered or clandestine, either in France or in the United States, almost surely has syphilis or gonorrhea, or both; and that even though she may be a paragon of physical beauty, she is more dangerous to him than contact with a case of smallpox.

"Sexual continence is the plain duty of members of the A. E. F., both for the vigorous conduct of the war and for the clean health of the American people after the war." These are the plain and forceful words which the G. H. Q. Bulletin No. 54 uses. But, if men must give way to their sexual desires, this Bulletin says that they should follow the regulations regarding prophylaxis, which, while not an absolute specific in preventing venereal diseases, has done much to keep down the incidence of venereal diseases in the Army.

G. H. Q. Bulletin No. 54 deserves, and no doubt will go down in history as one of the greatest military documents ever written. Its high moral tone makes it the kind of advice that a father would like to send to his son, and it will be so used in this and future generations. Every man in the Army should be provided with a personal copy of this Bulletin, and he should also be given an extra copy to send to a son or brother back home. We consider it of such value as a contribution to preventive medicine that it is reproduced in the editorial columns of *War Medicine*.

THE MORAL SIDE

Now that peace has been declared and the work and tension of war are relaxed, it will be more difficult to maintain discipline among soldiers, many of whom still have the old idea that a good time and "seeing the town" consist of debauchery with wine and women. It is difficult for them to realize that one such night may result, ten, twenty or thirty years later, in apoplexy, nephritis, paresis or other form of insanity, and many other conditions which cut men off in the prime of life; but every doctor knows of many such cases.

Now is the time to read G. H. Q. Bulletin No. 54 to line officers and men, because it not only points out the dangers of illicit sexual indulgence, but it appeals to the higher sense of right and to the patriotism of the splendid young men who are in the Armies of the American Expeditionary Forces. Medical officers, in performing their duty as instructors of personal hygiene in the army, should teach the soldiers in plain words the scientific facts regarding venereal disease, particularly its epidemiology, and they should also call attention to the degrading effects of associating and cohabiting with immoral women, whether prostitutes or not.

Burns, though he did not always "reck the reed" of his own wisdom, perhaps understood the emotions of men, or what is called "human nature," as well as any other poet. In his "Lines to a Young Friend" he brings out a thought which is worth while passing on to many young men now in France, who are away from the restraining influences of home at a

time in life when they most need the advice of their fathers:

"The sacred lowe o' well placed love
Luxuriantly indulge it.
But never attempt the illicit rove,
Though nothing should divulge it.
I wave the quantum o' the sin,
The hazard o' concealing.
But ach! It hardens a' within,
And petrifies the feeling."

G. H. Q.

AMERICAN EXPEDITIONARY FORCES

BULLETIN NO. 54

France, August 7, 1918.

1. The disturbance of normal social conditions caused by war tends to a breakdown of moral standards and an increase of immorality and venereal disease. Verified statistics of actual experience in the present war show that a great danger of venereal infection confronts both the civil population and the army.

2. To combat this danger full dissemination of the facts about venereal disease and rigid enforcement of regulations are essential.

3. Attention of all members of the A. E. F. is directed to the information and regulations governing the prevention of venereal disease contained in G. O. Nos. 6, 34 and 77, 1917, and in this order. All officers will see that these regulations are completely understood and carried out throughout their commands. Failure in this will be serious evidence of inefficiency.

(A) FACTS ABOUT VENEREAL DISEASE

The greatest source of venereal infection is the "regulated and inspected" house of prostitution.' The methods of inspection are grossly ineffective. The women in these resorts are *not* free from infection. They frequently stay daily with a score or more of men, each thus passing the infection from one man to those following him. There are numerous cases of soldiers contracting both syphilis and gonorrhea at these houses. The placing of "regulated" houses of prostitution "off limits" at one seaport reduced venereal infection to one-eighth the previous rate.

Venereal infection is highly prevalent among unregistered "clandestine" prostitutes, and exists today to an increasing degree in social classes hitherto little suspected. The practice of illicit indulgence in sexual intercourse will almost inevitably lead to venereal infection sooner or later.

In the majority of cases drunkenness precedes and leads to exposure to venereal infection.

Failure to submit to prompt prophylaxis increases the percentage of incapacitating infection. The effectiveness of prophylaxis depends upon the promptness with which it is employed. Within the first hour the failures are only one-tenth of 1 per cent., second hour one-half of 1 per cent., and after three hours from 1½ to 7 per cent. The average rate of failure for the A. E. F. of 2 per cent. indicates that in many organizations the *prompt* submission to prophylaxis is not enforced.

The methods of regulation adapted under the general orders referred to above have steadily reduced the venereal rate from 84 new cases per thousand men per year in 1916 to 29 in the A. E. F. today.

The contraction of venereal disease incapacitates for service and often produces permanent impairment of health. It is a breach of duty to the country, army, and fellow soldier.

(B) CONTINENCE

Sexual continence is the plain duty of members of the A. E. F., both for the vigorous conduct of the war and for the clean health of the American people after the war. Sexual intercourse is *not* necessary for good health, and complete continence is wholly possible. Careful studies show that only a relatively small proportion of members of the A. E. F. habitually indulge in sexual intercourse.

Commanding officers will urge continence on all men of their commands as their duty as soldiers and the best training for the enforced sexual abstinence at the front. Instruction, work, drill, athletics and amusements will be used to the fullest extent in furthering the practice of continence.

(C) LEAVES

All night and week-end leaves are a fertile source of infection, multiplying contacts and delaying prophylaxis. Such leaves will be denied as much as possible.

(D) DRUNKENNESS

The provisions of existing orders relating to the sale of intoxicants to members of the A. E. F. will be uniformly and strictly enforced. Cases of drunkenness will be dealt with by prompt disciplinary action.

(E) PROPHYLAXIS

All means will be adopted to enforce the uniform and *early* use of prophylaxis.

(F) COURTS-MARTIAL

Courts-martial will be sufficiently severe in dealing with cases of venereal infection to deter men from wilful exposure. The records of all sentences imposed will be carefully examined and compared, and lax courts and officers held strictly accountable.

(G) TREATMENT

The importance of early treatment is so great that officers will urge their men to report for examination on any suspicion of disease.

(H) HOUSES OF PROSTITUTION

Throughout the A. E. F. all houses of prostitution, as well as saloons indulging in the improper sale of intoxicants to members of the A. E. F., will be designated as "off limits." Commanding officers will adopt the necessary means and disciplinary measures to prevent soldiers from visiting them.

(I) APPREHENSION OF CLANDESTINE PROSTITUTES

By co-operation with the French police, military, and civil authorities, every effort will be made to repress clandestine prostitution and street walkers and employ every available means under the French law to have all such women sent away.

(J) REPORTS

Reports of conditions in contravention of the purposes of this order will be made by military police and all officers concerned.

1. The C. in C. enjoins upon all members of the A. E. F. the strictest observance of sexual continence. His position on this question is stated, as follows, in a letter appointing representatives to a British-American conference on the subject:

"I have heard with great satisfaction of the recent decision of the British War Office that the licensed houses of prostitution are to be put out of bounds in the B. E. F. Many of us who have experimented with licensed prostitution or kindred measures, hoping thereby to minimize the physical evils, have been forced to the conclusion that . . . . . abolition as distinguished from regulation is the only effective mode of combating this age-long evil. I have the greatest hope that the results of the conference which you have called will be far-reaching in their effect. This menace to the young manhood in the Army forces and to the health and future well-being of our peoples can not be met by the efforts of each Government working apart from the others. . . . . The gravest responsibility rests on those to whom the parents of our soldiers have intrusted their sons to the battle, and we fail if we neglect any effort to safeguard them in every way.

'We have the common ground of humanity; we have the well considered conclusions of the best scientific minds on our side, and from the fact that, in this war of nations-in-arms, the soldier is merely a citizen on war service, we have all the elements which will force co-operation between military and civilian authorities. With our nations co-operating hand in hand, ... we have the brightest prospects of winning the victory."

By command of General Pershing:

JAMES W. McANDREW,
Chief of Staff.

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AUTHORS' ABSTRACTS

Tropical Diseases and Public Health

Advertising as a Force in Public Health Education. Jules Schevitz, Oklahoma City, Okla. American Journal of Public Health, Vol. 8, No. 12, December, 1918, p. 916.

Selling health is the primary object of tuberculosis (and all public health) associations, and the more closely these agencies imitate the selling methods employed by the successful business organizations of this country, the more fruitful will be the efforts of our private and public health activities.

In the article under consideration, the author gives as examples of the value of advertising methods in the administration of a health organization his success in campaigns for raising funds and for educating the people in the principles of healthy living. More recently through the aid of similar methods the Oklahoma Tuberculosis Association found it possible to secure the enactment of some very comprehensive tuberculosis legislation providing for the establishment of three state tuberculosis sanatoria, entailing an appropriation of $350,000 and creating a Bureau of Tuberculosis in the State Department of Health.

The injection of advertising methods, whether it be in the preparation of a pamphlet, the construction of an exhibit, the arrangements for a meeting on the conduct of a health legislative campaign, will increase manifold the value and accomplishments of the general public health campaign.

In planning an educational campaign, at least three points must be considered. First, the material must be so designed that it will contain truthful information in attractive form; second, it must be so distributed that it will reach large numbers of people; and third, the distribution must be of such a nature that it will reach these persons at a time when they are in a mood to receive the message. If these three conditions are fulfilled, the educational material serves its purpose. Otherwise the methods employed are wasteful and inefficient.

No form of health education presents a more perfect combination of these three fundamental elements than does display advertising in the newspapers. Nowhere can health education be more attractively displayed, more widely and more opportunely spread than through display advertising. The newspaper is the most widely used medium for obtaining information. People read newspapers to become informed, and if the paper contains any material pertaining to health, this, too, will be seen. The display advertisement has the important advantage over the news story and the special article, in that it possesses the qualities of novelty, attractiveness and cleverness while the others are most often dull and lifeless and frequently unattractive.

As the situation exists today, the medical quacks and patent medicine fakirs have monopolized the field of public health advertising too long. It is time that those who are truly interested in the welfare of the people took the field.

SURGERY

WAR, RAILWAY, INDUSTRIAL, GYNECOLOGICAL, OBSTETRICAL AND UROLOGICAL.

TREATMENT OF TUMORS OF THE UPPER JAW WITH THE CAUTERY: A PRELIMINARY REPORT*

By Joseph Colt Bloodgood, M.D.,
Baltimore, Md.

The employment of the cautery in the partial or complete removal of malignant tumors is an old method. My own experience during the past five years has demonstrated that we have much to learn as to the details of its application.

When we compare the results of operations for the removal of tumors of the upper jaw with the knife alone with the results of the removal of identical tumors with the cautery, we find that we have distinctly decreased the mortality, and when we have accomplished cures it has been with less mutilation. That the actual number of cures has been increased can not be demonstrated at the present time.

The reduction in mortality is associated with the employment of local anesthesia alone, or in combination with light chloroform general anesthesia.

In many instances it is safer to remove the disease involving the upper jaw in stages. It is remarkable how much can be done under local anesthesia alone. When a general anesthetic is necessary, chloroform, in my experience, seems to meet the indications best. It does not interfere with the use of the cautery. It is the best anesthetic when operations are performed in the region of the oral cavity. It should never be pushed to complete narcosis. The patient has no memory of pain, and although he is so lightly under the influence of the anesthetic that all reflexes are active, he remains more or less quiet.

When chloroform is not pushed to complete narcosis the danger seems practically eliminated, and the operations can be repeated at intervals of three or four days. In some of my cases there have been as many as fourteen operations.

The surgeon should hold himself responsible for the anesthetic and direct its administration. In all of my cases the pulse and blood pressure are recorded every five or ten minutes. The chloroform is rarely administered longer than one hour. When the cautery instead of the knife is employed, the operation can be discontinued at any moment.

The duration of the operation and the number of operations largely depend upon the general condition of the patient and local extent of the neoplasm.

When the cautery is employed it is possible to remove the tumor piecemeal and to destroy from tumor tissue into the surrounding healthy tissue without danger of dissemination, while with the knife one must give the tumor tissue a wide margin and remove the entire mass *enbloc* at one operation.

In tumors involving the upper jaw the complete excision with the knife, when the disease is extensive, always sacrifices more healthy tissue than when the cautery is employed, and the danger of this single extensive removal with the knife is greater than the removal in stages by the cautery.

In the removal in stages with the cautery it is also possible to have a pretty positive microscopic control as an indication that enough has been done. One also learns quickly to distinguish granulation tissue in which there is no tumor tissue from that which still contains tumor tissue by its gross appearance which can be checked by the removal of a piece for microscopic study with the cautery.

The new growth should be attacked with the cautery from two points. One should burn the tissue at the border of the tumor. This not only destroys the infiltrating area, but excites in the healthy tissue beyond a granulation tissue which of itself is largely protective against secondary invasion, at least during the period of com-

*Read before the Southern Surgical Association, Twenty-first Annual Session, Baltimore, December 18, 1918.

plete removal. The second attack should be upon the new growth itself, if possible, from the center out.

These two methods of attack are varied according to the size of the neoplasm and its local growth and the anatomical character of the surrounding uninvolved tissue.

I find that I am helped by a thorough knowledge of the character of the local growth and its microscopic appearance based upon a careful study of similar cases recorded in the Surgical Pathological Laboratory of the Johns Hopkins Hospital.

Three cases will be reported in detail. Case I was an adenocarcinoma arising in the left antrum with metastasis to the glands of the neck, apparently well two years and nine months after operation. (See Figs. 1 to 4.) Case II was a fibromyxoma of the alveolar border of the left upper jaw involving the antrum and cheek, apparently well one year and nine months after operation. (See Figs. 5 to 8.) Case III was a primary carcinoma of the right antrum, not cured. (See Figs. 10 and 11.) Other cases treated by the method here described are not reported either because the treatment is still incomplete or the time since the last operation is too short.

This paper must be looked upon as a preliminary report only.

Case I.—Pathological No. 19078.—Mrs. J. M. Jaw. Antrum. Adenocarcinoma. Metastasis to the glands on the left side of the neck. Removal of the tumor in the antrum with an actual cautery in two operations. Complete excision of the glands four months later. Result May 1, 1919—two years and ten months after the removal of the glands—no signs of recurrence nor general metastasis. Illustrations: Figs. 1, 2, 3, and 4.

Up to the time of this case I had never observed a cure of a carcinoma of the antrum even after the most extensive resection of the upper jaw. This is the first case in which the cautery was employed. Although it is less than three years since the removal of the metastatic glands, the probabilities of a cure are excellent, because in our previous observations there are no examples of such a long interval without signs of local recurrence.

This patient, a white female, aged 38, was referred to me in March, 1916, by Dr. J. H. Crisler, of Memphis, Tenn. The symptom of onset was swelling of the left upper jaw of two months' duration. The condition had been diagnosed an abscess, but an incision through the hard palate had revealed no pus. Two molar teeth on the left side had been extracted.

Examination.—The bulging of the face in the region of the left antrum, as shown in Fig. 1, is rather characteristic of a primary lesion of the antrum, either sarcoma or carcinoma. There was pain in the region of the hard palate, but no bulging. This as a rule is a later sign than the bulging of the face. The incision in the hard palate had not healed. There was no exophthalmus. There was no evidence of nasopharyngeal polypi and no obstruction of the left

Fig. 1, Case 1.—Pathol. No. 19078. Primary adenocarcinoma of left antrum. White female, aged 38 years; visible swelling shown in photograph of two months' duration.

nares except that due to a bulging of the antrum wall. The x-ray showed a cloudiness of the left antrum. The other sinuses were apparently clear.

The Wassermann was negative. There was no anemia. The leucocytes were 14,000, with a slight increase of the neutrophiles, 74%.

Clinical Diagnosis.—Practically only sarcoma and carcinoma produce this rapid bulging in the face. The benign nasal polypi rarely produce this bulging except when the duration is more than two years.

Operation.—March 11, 1916. Ether was given by the intrapharyngeal method by Dr. Stewart. Novocaine was infiltrated into the skin. From the palpation of the swelling of the face and from the evidence of destruction of bone in the

x-ray, I felt quite positive that the anterior bony wall of the antrum was destroyed by the new growth. For this reason I made the skin incision with the electric knife cautery and exposed a ragged opening in the anterior bony wall of the antrum the size of a 50 cent piece. The tumor was first burned in its center with both the electric and the Percy cautery. Then the opening in the antrum was enlarged by first burning the bony shell and then biting the bone away with a pair of scissors. The tumor did not bleed when burned with the cautery. It was the size of an egg and filled the antrum cavity. The with light chloroform, as the ether had to be continuously removed for the employment of the cautery.

When I exposed this tumor with the cautery I did not remove a piece for frozen section, because the destruction of the bony wall and the appearance of the tumor were sufficient to make a diagnosis of malignancy.

When the charred tumor was removed, we could still recognize fine, gray, granular areas in a fibrous stroma—the gross picture of an alveolar neoplasm—probably carcinoma.

The microscopic section (Fig. 2) demonstrates

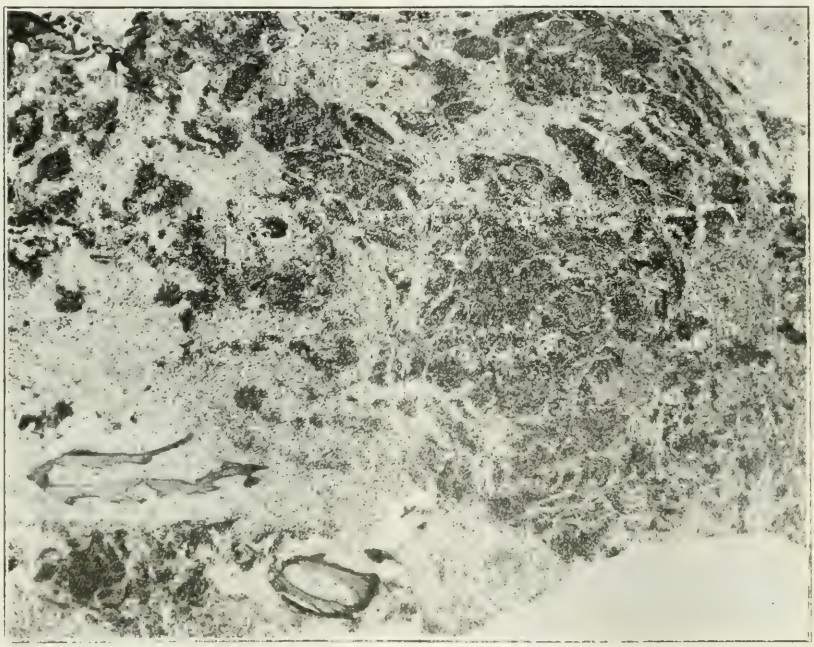

Fig. 2, Case 1.—Pathol. No. 19078. Microscopic picture, low power, of adenocarcimona of antrum removed with cautery (See Fig. 1). The section shows some spicules of bone, demonstrating that the tumor had infiltrated beyond the bony shell.

bony wall toward the orbit and the hard palate were apparently not destroyed. With the electric knife cautery used like a periosteal elevator, I cauterized and destroyed the tissue between the tumor and its surrounding bone and soft tissue. Especially the septum between the tumor and the nose was thoroughly cauterized. However, all the tumor tissue was not removed. The wound was packed lightly.

The intrapharyngeal anesthesia with ether was not so satisfactory as our later experience that we are dealing with a rare type of adenocarcinoma which apparently originates from adenomatous polyps of which Fig. 3, from another case, is an example. This form of carcinoma of the antrum is much less frequent than the carcinoma spinocellulare.

Second Operation.—March 16, 1916, five days after the first operation, with the same method of anesthesia, the cavity was again thoroughly burned with both the high heat electric and Percy cautery until the growth was apparently all de-

stroyed or removed. At this operation we found that the tumor had apparently arisen between the nose and the antrum. It had also destroyed some of the bony wall separating the antrum from the orbit. There was uninvolved mucous membrane in the upper and outer portion of the antrum cavity. The nasal septum was not completely removed.

The wound rapidly filled with healthy granulation tissue. The patient had very little discomfort from the operation and made a rapid recovery. It was my opinion that the glands by Dr. Crisler. The operation consisted of the complete excision in one piece of the submental, submaxillary and subparotid lymph glands and the submaxillary salivary gland. This was done with the cautery under novocaine and light drop ether. The only gland involved in gross and microscopic examination was the submaxillary lymph gland. This gland was the size of a 25 cent piece. Its cut surface was white and somewhat myxomatous, studded with yellow dots and lines. The section resembled that of the primary tumor.

Remarks. Fig. 4 shows the result in March,

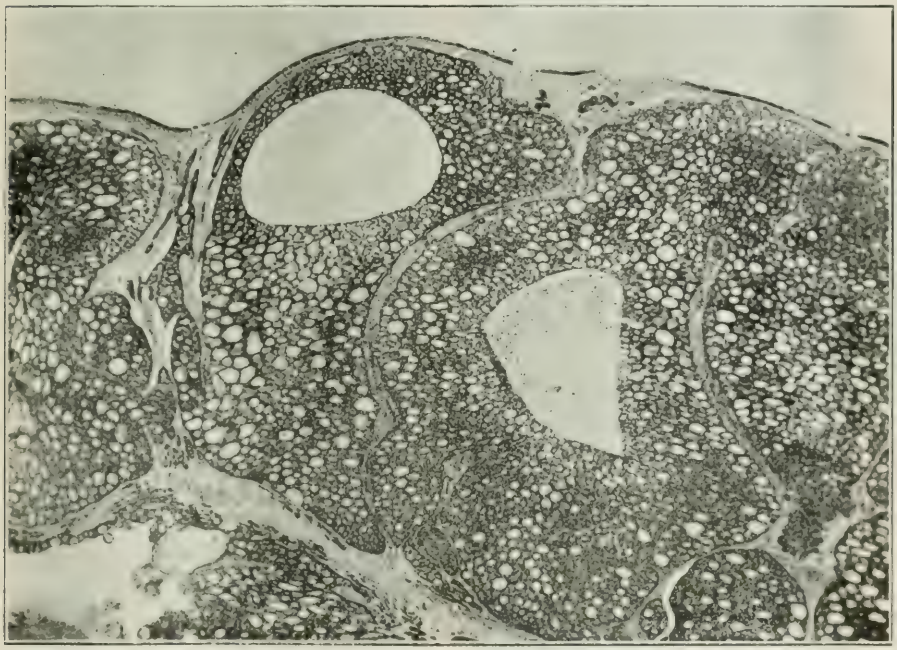

Fig. 3.—Pathol. No. 18096. Microscopic picture (lower power) of benign adenoma in a polypoid growth filling the antrum. Compare this with Fig. 2, adenocarcinoma.

should not be removed until there had been a further observation as to local recurrence.

It is important to note that in the healing of the wound most of the bony wall of the antrum cavity was discharged as sequestrum, and there was nothing between the cavity and the mouth but the mucous membrane of the palate.

Third Operation. July 8, 1916, four months after the second operation, the patient returned because of palpable glands in the region of the left submaxillary gland which had been observed

1918, two years after the primary operation upon the antrum and a little less than two years after the excision of the glands of the neck. The patient wears a small piece of white gauze over the small opening, which is a very slight deformity. She is planning to return this summer for a plastic operation, which has been deferred chiefly to watch for local recurrence, as the most important result to obtain in a case of this kind is a cure. The openings at the present time are much smaller.

It is my opinion that this case suggests a method of successfully attacking a primary lesion of the antrum. There was no necessity in this case for even the short

Fig. 4. Case 1.—Pathol. No. 19078. Result in Case 1, two years after the removal of an adenocarcinoma of the antrum and one year and eight months after excision of metastatic glands of the neck. This patient is apparently well May 1, 1919. (See Figs. 1 and 2.)

delay of two months. The primary swelling at the onset was sufficient to indicate an exploration of the antrum. In very early cases the exploration to obtain a piece for microscopic study could be made through the nose, but an exploratory incision through the face produces practically no scar and gives a far better view of the contents of the antrum. When the clinical and the x-ray diagnosis are as positive as in this case, this method of exploration should be chosen.

Case II.—Pathological No. 21862. Master F. C. Jaw. Region of the left antrum. Fibromyxomatous tumor, perhaps sarcoma, involving the alveolar border and destroying the anterior wall of the left antrum. Removed in three stages with the cautery July, 1917. Well April, 1919, almost two years later. Illustrations: Figs. 5, 6, 7, 8, and 9.

This patient came under my observation April 28, 1917, having been referred to me by Dr. E. T. Negendank, of Wilmington, Del.

The patient was a white boy aged eleven years. The present trouble was of seven weeks' duration. First there was pain in the region of the upper molar on the left side, thought to be due to the appearance of the second molar. Then the swelling came on the outer surface of the alveolar border of the left upper jaw about a molar tooth. The dentist looked upon this as a gum boil. I emphasize this, because many of my dental colleagues disagree with my observation that the first symptom of a malignant tumor may resemble a gum boil. The patient was re-

Fig. 5, Case 2.—Pathol. No. 21862. Fibromyxomatous tumor (sarcoma?) originating from the alveolar border of the left upper jaw breaking into the antrum cavity and infiltrating the cheek. Removed by the cautery in three stages July 11 to August 19, 1917. Well April, 1919.

ferred to a surgeon who made an incision over the gum boil and reports that he found a small abscess, but exposed tissue which did not resemble the normal. In my opinion this tissue was the myxomatous tumor, situated on the alveolar border and beginning as a periosteal growth.

Following the cleansing of the cavity the severe pain and swelling somewhat subsided. Later another surgeon removed a molar tooth and exposed what he called a cauliflower growth. Following this two anterior teeth fell out, and there was some sloughing of the tissue in the

Fig. 6, Case 2.—Pathol. No. 21862. The result showing the open wound after the treatment of the cases shown in Fig. 5.

open wound. A few days after this operation the pain increased and the swelling of the alveolar border extended to the face. The patient has had a number of x-ray treatments.

Examination. Fig. 5 shows the swelling on the left side of the face. The changes in the skin on both sides of the face are apparently due to x-ray burns. The patient is anemic from pain and loss of sleep and difficulty in eating. He is extremely nervous and apprehensive on account of the seven weeks of discomfort and the numerous interventions.

There is no obstruction to the left nares. There is no exophthalmus, no pain in the ear, and no change in hearing. The swelling of the cheek extends down over the lower jaw and is apparently due to a growth between the mucous membrane and muscle. Examination of the mouth was difficult because it was painful and the patient was very nervous. There was present in the left upper jaw the last molar and the two incisors. The alveolar border of this defect was occupied by a projecting smooth mass, covered, except in some places, with normal mucous membrane. Occupying the defects in the mucous membrane was granulation tissue. The mucous membrane to the inner side of the teeth and of the palate was uninvolved, as also was the mucous membrane of the cheek, but a tumor mass could be felt beneath the mucous membrane of the cheek. The x-ray showed a cloudiness of the left antrum. The other sinuses were clear and there was apparently destruction of the anterior wall of the antrum cavity over a larger extent than in Case I, Fig. 1.

The age of the patient would exclude a carcinoma. The more common tumor to arise along

Fig. 7, Case 2.—Pathological No. 21862. The result March 15, 1919, in case illustrated in Figs. 5 and 6.

the alveolar border and grow into the antrum or to arise in the antrum and break through and project from the alveolar border, is a fibromyxoma, a type of tumor which can be cured by local removal, but which generally recurs if cut into,

enucleated or shelled out, because bits of tissue are very apt to be left behind and to grow very rapidly even as transplants.

The extent of this tumor would have forced an operation with the knife so radical that the resultant defect even when covered with a successful plastic would have been unsightly. For this reason I decided first to explore, then to give the x-ray a further trial, and then to attack the tumor with the cautery.

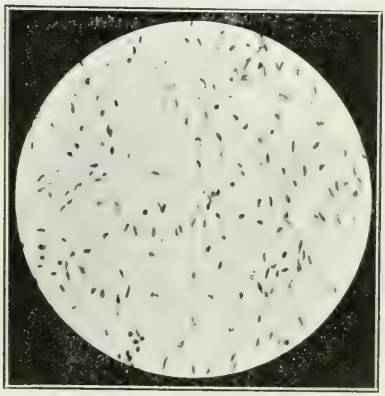

Fig. 8, Case 2.—Pathol. No. 21862. Microscopic picture (high dry power) of a fibromyxomatous area of the tumor removed from the upper jaw (See Figs. 5, 6 and 7). There is no evidence of sarcoma in this section.

First Operation.—On May 1, 1917, under cocaine, I explored just below the orbital ridge, exposed a thin shell of bone, demonstrating that the tumor had not destroyed the bone in this area. Removing this bone, there appeared the mucous membrane lining of the antrum, which, when incised, contained a little clear mucoid fluid. With the finger I could feel the soft tumor below and between this antrum cavity and the nose. The communication with the nose had been closed by the tumor growth. The tumor had either originated as a periosteal growth along the alveolar border, broken through the bony wall of the antrum, or had its origin in the tissue between the mucous membrane and the bony capsule of the antrum and had broken through along the alveolar border. A small drainage tube was placed into this cavity. This relieved the discomfort, and under x-ray treatment the swelling somewhat subsided. In the latter part of June, six weeks later, when the patient was apparently doing well, there appeared a definite erysipelas. The redness and swelling lasted about one week. But after the signs of erysipelas had disappeared, the tumor began to grow. For this reason operation was decided upon.

Second Operation.—July 11, 1917, under light chloroform anesthesia, I excised a zone of skin about the size of a silver dollar over the cheek. The tumor had infiltrated into this skin. I then burnder the center of the tumor with both types of cauteries and burned between the tumor and the surrounding tissues with the electric knife cautery, removing some of the tissue for microscopic examination. This fibromyxomatous tissue, on account of its watery and mucoid character, is very resistant to destruction by heat, and although we worked an hour and one-half, much tumor tissue, especially in the periphery, was left behind. There, however, was a huge cavity lined by charred tumor tissue. I could feel that the bone of the hard palate, the bony wall of the orbit, were intact. Most of the anterior bony wall of the antrum had been destroyed. The mucous membrane of the antrum had prevented the tumor from entering the orbit and it had not infiltrated far into the temporal fossa or toward the ramus of the lower jaw. It extended up the antrum between the nose and the eye, on the alveolar border to the second canine, posterior to the last molar and down the cheek between the mucous membrane and the skin almost to the lower jaw. This infiltration was later demonstrated by microscopic study. Tumor tissue was present both on the inside and the outside of the anterior bony wall of the

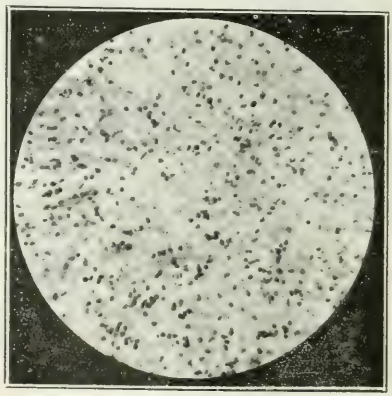

Fig. 9, Case 2.—Pathological No. 21862. Microscopic view of a more cellular area in the fibromyxomatous tumor. (Compare with Fig. 7.)

antrum, suggesting that it had originally been a primary periosteal growth.

The condition of the wound fourteen days after this operation is shown in Fig. 6. Following this operation the boy was relieved of pain. He immediately began to sleep and to gain in weight.

Two further cauterizations under chloroform were made, the last August 19, 1917, when apparently all the tumor tissue had been removed. This was confirmed by microscopic study.

To demonstrate the apprehension of this patient and his extreme nervousness, especially in relation to an anesthetic, it is interesting to note

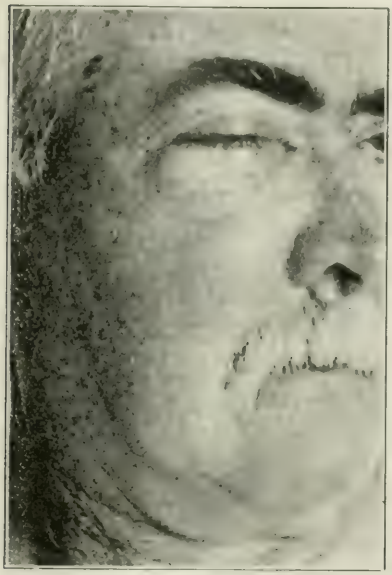

Fig. 10, Case 3.—Pathological No. 21917. Carcinoma primary in the right antrum.

that at the first anesthesia with chloroform starting on the wheel chair outside the operating room, it required three-quarters of an hour to render the patient sufficiently unconscious to place him on the operating table, and I must here acknowledge my indebtedness to Drs. Cummings and Long for their patient and efficient assistance.

After the last cauterization we were able to save the last molar tooth and two incisors. There was an opening between the cavity and the mouth along the alveolar border between the molar and the incisor. This wound gradually healed. The small resulting defect is shown in Fig. 7, taken March 29, 1919, one year and eight months after the last operation. We see between the skin edges mucous membrane, the posterior upper molar. The small opening into the oral cavity admitting a slate pencil anterior to this molar is not seen in the picture.

Despite this boy's frightful experience, he is now normal in every way, strong mentally and physically, and is very anxious for the plastic operation, which will be performed this summer. The operation was delayed to give the natural healing processes time to reach their utmost limits.

The tumor (Figs. 8 and 9) is a fibromyxoma. I am inclined to think that the cellular areas in Fig. 9 are due to reaction to infection or the cautery and should not be interpreted as sarcoma.

From a very large experience with tumors of the upper jaw, I feel confident in concluding that in this case by the methods employed we have accomplished a cure with less mutilation

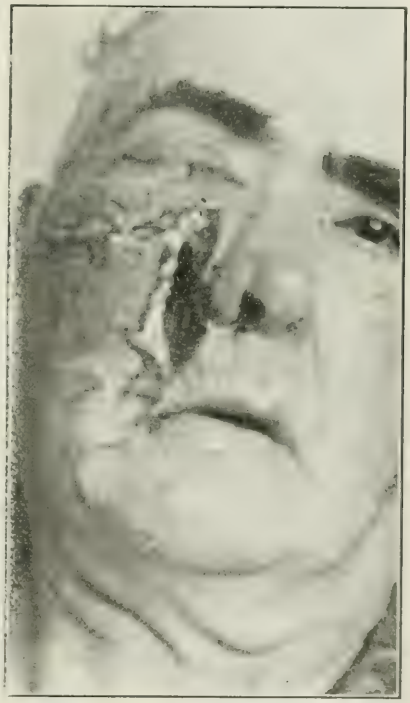

Fig. 11, Case 3.—Pathological No. 21917. Carcinoma primary in right antrum showing the skin flap and wound after two treatments with the cautery.

and less risk of an operative mortality than if we had attempted the complete excision with the knife at one sitting.

Case III.—(Pathological No. 21917.) Jaw. Antrum. Carcinoma, primary. Operation: Novocaine-chloroform. Treatment of tumor with cautery on five occasions from July 26 to October

2, 1917. Death on February 10, 1918, from nephritis.

This patient, D. E. F., was a white male aged 67. He was referred to me by Dr. W. F. Twigg, of Cumberland, Md., July 20, 1917. His occupation was that of a locomotive engineer. Following a severe cold six months previously, he found that he had obstruction to breathing through the right nostril which he had never before observed to persist so long. He was examined one month later by a nose and throat specialist, but nothing was done except an attempt to dilate the obstructed nostril. Four months after onset, two months before he came to me, a piece of the tumor was cut out through the right nostril. This piece of tissue was lost. The obstruction of the right nares continued. Swelling of the face and bulging downward of the hard palate had been present for six weeks. The tear duct into the nose had been closed for five weeks.

Examination.—The external swelling is shown in Fig. 10. The mass projecting from the right nares is a muco-purulent secretion. A partial closure of the right eye is due to infiltration of tumor tissue between the lower eyelid and nose. There is a bulging of the hard palate. The right nares is plugged with a soft granular mass entirely different from a polypous growth and not very vascular. The x-ray shows cloudiness of the antrum.

The probable diagnosis made in this case, on account of the age of the patient, was primary carcinoma of the antrum.

First Operation.—Novocaine and light chloroform anesthesia. The skin incisions were made with the cautery, because we could tell by palpation that the tumor had broken through the anterior bony wall of the antrum. These incisions exposed a solid, firm, granular mass filling the antrum cavity. The entire anterior bony wall of the antrum was destroyed. The tissues were very resistant to the cautery. In view of this evident infiltration beyond the confines of the antrum, destruction of the tumor was begun from the center outward.

Fig. 11 was taken on August 4, 1917, nine days after the first cauterization and four days after the second. It shows the skin flap sutured in place. Cauterization had to be done carefully, because of the resistance of the tissue and because the patient was not in good general condition. The urine showed albumin and casts and the blood pressure was 190. By August 30, about one month later, after about six cauterizations, the entire zone of the antrum had been destroyed, but there was still tumor tissue extending upward between the orbit and the nares and outward toward the temporal fossa. At these operations it was demonstrated that the bony shell had been almost completely destroyed by the carcinoma and the tumor had infiltrated beyond in many directions. There was no cauterization between August 30 and October 2 because of the general condition of the patient. At this time there was still evidence of disease. It could be recognized in the gross and was confirmed by the microscopic section. After the cauterization on October 2 he was given radium treatment on October 5 by Dr. Janeway, of New York.

The patient died with symptoms of nephritis February 10, 1918, five months later. The wound, however, seemed filled with healthy granulation tissue, but I am confident that the disease was still present.

CONCLUSIONS

I have had a large experience with carcinoma of the antrum of this type. It is a much more common pathological type than in Case I reported here. In this series there is not a single permanent cure after the most radical excision of the upper jaw. As in this case, so in the others, the growth had broken through the bony shell and infiltrated tissue beyond the zone of possible excision with the knife. In all these cases, except those with a long history of nasal polypi, the duration of the symptoms has been short—usually less than nine months. In this case the condition had become inoperable within six months. In all of these cases it would appear that a careful examination in the early days or weeks after the onset of the first symptoms would have disclosed an involvement of the antrum.

I am impressed from my observations in Case I that an exploration of the antrum through the face in the early stage of the disease and the destruction of the growth in the antrum with the cautery offers a hope of a permanent cure even in the more malignant types of carcinoma and sarcoma. But in Case III the disease had infiltrated beyond the possibility of destruction with the cautery, and as yet I have no evidence that the x-rays or radium offer more hope than some temporary delay in the local growth and ultimate death.

The only advantage that the cautery seems to offer over eradication of a cancer in the early stage is that the operation itself is less severe than the complete excision with the knife and is less mutilating.

Also, when cancer in this situation is removed by the knife, there is great danger of breaking into the growth and bringing tumor tissue in contact with uninvolved tissue. My observations lead me to conclude that such an occurrence explains many of the local recurrences. This danger is less, or entirely eliminated, when the cautery is employed.

SURGICAL PROCEDURES IN EVACUATION HOSPITALS*

By Herbert P. Cole, M.D.,
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This discussion of the surgical treatment in evacuation hospitals will be limited to the general situation as applied during the last two months of the war. The system was largely evolved from those of the British and French as adapted to the constantly changing and shifting plans of the American Army.

In general, the evacuation hospitals were situated in French hospitals of wooden construction and supplemented by large tents and additional hastily-constructed buildings where the occasion required. These hospitals were necessarily of a temporary nature and most of them so constructed as easily to be removed from one point to another. They received their patients from the field hospitals and were situated from five to fifteen miles back of the lines. They had a capacity of five hundred beds and could be expanded readily to care for as many as fifteen hundred or two thousand patients. They were situated as a rule along lines of good amublance transportation and usually along the main rail heads, many of them having railway sidings running from the evacuation department. A number of base hospitals at a further distance were so changed as to act as evacuation hospitals in the event of a drive.

The evacuation hospitals nearer the line served to treat the non-transportable patients. These in general were chest cases, abdominal injuries and cases of severe shock and hemorrhage. The more lightly wounded and the lightly gassed and sick cases were sent to evacuation hospitals further back.

The evacuation hospitals served for the performance of the first major surgery and necessarily were well equipped for the rapid handling of large numbers of sick and wounded. The general administration evolved itself into three heads: first, the reception and classification of patients; second, surgical attention to grave cases; and third, the evacuation of transportable cases.

In the surgical pavilion, a number of surgical teams worked on eight- or twelve-hour shifts, each team being provided with from one to three tables, an operator and assistant, two orderlies, and a nurse. One or more sterilizing rooms provided sterile supplies and instruments. Portable electric lighting and sterilizing equipment made the operating facilities adequate to the situation. In general, there was an adequate equipment of instruments, supplies, gloves, gowns, towels, and suture material. Usually there was a sufficient number of surgical teams and well-trained orderlies. The nursing corps, whereas not always sufficient in number at the beginning of the drive, was usually supplemented within a few days.

In the effort to handle vast numbers of cases in short periods of time, standardization of treatment was the rule. The greatest good for the greatest number was the essential feature. Individual ideas in the method of treatment were discouraged in an effort to complete this standardization. The fact that 90 % of the injured in the Chateau Thierry offensive were returned to duty is an evidence that the standardized methods were efficient.

Each team, upon receiving a case, made a general examination before operation. A note was made of the patient's name, rank and organization, together with the x-ray and operative findings. These slips were filled out in triplicate, one accompanying the patient to the next hospital, one to be turned over to the authorities of the evacuation hospital, and the other to become the property of the operating team. A final inspection of the patient's field card was made here and tetanus antitoxin was administered if the card did not show that the patient had already received an immunizing dose.

Surgical cases immediately treated were prepared for examination in the preoperative ward and rapidly passed through the x-ray room, where teams of x-ray operators made thorough fluoroscopic examinations. Thence they were banked up in front of the operating area, where they were kept warm and comfortable and constantly observed for shock. Cases in shock or developing shock at the hospital were

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immediately transferred to wards especially prepared for treatment of that condition. In general, the average soldier was an individual in good physical condition who reacted well to the warmth and morphia. Cases with a blood pressure below 100 mm. were considered in shock. Where facilities offered, shock cases demanding surgical intervention were operated upon under local or nitrous oxid-oxygen. The majority of operations were conducted under ether without preliminary treatment.

The offensives were conducted in agricultural regions that had been heavily fertilized for years. This precluded the possibility of their having many clean wounds. The great majority were considered infected, and open treatment was, therefore, the rule. Through-and-through machine gun, rifle and pistol bullets involving only the soft parts, were the only types of wounds where serious infection was not prone to follow. Cleaning up of the wound of entrance and exit was usually the only procedure. Wounds due to hand grenades, shrapnel and high explosives invariably required extensive debridement and splitting of fascial planes.

Cultures were taken from wounds suspected of gas bacillus infection and the post-operative treatment and observation depended upon the laboratory reports. Upon the appearance of gas gangrene, extensive debridement of muscle groups and splitting of fascial planes was instituted. Amputations were performed after consultation. Debridement consisted of a removal of the injured skin and the contused and lacerated muscles, together with the removal of foreign bodies, clothing, dirt and unattached fragments of bone. As little skin as possible was removed. Where a thorough debridement was impossible, the wound was widely opened to secure free drainage and Dakinization.

The majority of the wounds were left wide open without packing, the sides being protected from contact with the dressings by gauze sterilized in vaseline or some similar material. Exceptions to this rule were wounds of the head, chest, abdomen, joints and face, experience having taught that such wounds could be treated by primary suture. Most extensive debridement was necessary in the wounds involving large groups of muscles such as the back, gluteal region, and thigh. Wherever possible, deep conical surfaces were left for later Dakinization.

FRACTURES

Many of the wounds were associated with fractures. Simple fractures with wounds of the soft part not extending to the bone, were treated by the removal of the foreign body, debridement of the tract, and the application of a splint suitable for transportation. Bone fractures with wound of the soft part extending to the bone, required debridement with removal of the loose portions of bone. These wounds were also left wide open. Splints were applied by orthopedic teams after the surgical teams completed their operation.

JOINT WOUNDS

Wherever possible, a thorough cleaning of the joint, with suture of the capsule, was the procedure. The fat and skin was left unsutured. A post-operative aspiration was performed if necessary. These cases were usually kept in the hospital for several days. Early motion of the joint was practiced. Late cases with suppuration required free incision. Voluntary motion was instituted within a few hours and frequently repeated. There was no drainage into the joint. A resection of a joint was seldom performed. Most machine gun or pistol shot wounds of the joints, if through and through, did not require operation. A latter aspiration was performed if required.

ABDOMINAL INJURIES

As a rule, abdomens were closed with double catgut in the peritoneum and muscle and a catgut suture of the outer fascia. The skin and fat layers were left open as the latter layers were more prone to infection. Practically 50 % of the abdominal cases operated upon within a reasonable period after injury recovered. The question of operating upon the abdominal cases was indeterminate, even at the signing of the armistice. Cases injured over eighteen hours were as a rule inoperable, or had taken care of themselves. Cases obtained within four hours after injury, showed a recovery of 50 %. Those injured over twelve hours, showed a recovery in the hands of some of only 5 %. A signed consultation was required for the performance of enterostomy. This was

the only valuable procedure for ileus as a result of peritonitis.

CHEST CASES

All sucking wounds of the chest were closed. Small foreign bodies were not removed. Large foreign bodies in the lung associated with hemorrhage required resection of the rib and complete closure. These cases were aspirated later as required.

BRAIN AND NERVE INJURY

Brain and nerve cases were carefully examined for paralyses. Brain operations, as a rule, were performed by special operating teams. The operating was done under local anesthesia with extensive debridement of the wound, and sucking out of destroyed brain tissue was accomplished by the use of sterile salt solution and a rubber catheter attached to a syringe. In this manner there was less destruction of brain tissue, and frequently small foreign bodies were sucked out of deep brain wounds. The wounds were carefully sutured and a great majority healed by primary intention. Where there was quite a loss of substance preventing immediate anastomosis of nerves, silk sutures were attached to the nerve ends and left in the wound for guidance at a later operation.

FOREIGN BODIES

Foreign bodies smaller than from 2 to 3 millimeters were not sought as a rule. Somewhat larger foreign bodies were often left if in a region not likely to prove immediately dangerous. Patients having multiple wounds from foreign bodies presented the problem of removing the larger bodies situated in the more dangerous regions.

AMPUTATION

All amputation required a signed consultation with the chief of the surgical service. As a rule these amputations were of the guillotine type and effort was made to preserve all the muscles, tendons, skin and bone possible. Amputation of a circular skin section was performed about one inch below the site of the muscle section. There was a circular section of muscle at the point of skin retraction. The periosteum was trimmed for one quarter of an inch above the bone end. The bone marrow was reamed out one-fourth of an inch deep. Skin traction could be applied within 72 to 90 hours.

BLOOD VESSELS

Injuries involving large blood vessels required careful examination of the terminal pulse. Injury to a large blood vessel, whereas not requiring amputation in ordinary civil surgery, predisposed these patients to infection from the ever-prevalent gas bacillus due to limitation of blood supply.

In conclusion, it might be stated that the foregoing is a brief resume of the major activities of the surgical service in the evacuation hospitals. An effort has been made to illustrate the quite definite rules of treatment that were instituted. The results in the recovery of wounded have substantiated the methods of treatment.
Van Antwerp Building.

DIAGNOSIS AND TREATMENT OF ABDOMINAL PAIN*

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The analytical, differential consideration of abdominal pain is not only a fascinating study, but some system of deductive valuation and eliminative sifting should be developed for the emergency patient who is thrust upon you with violence and confusion for imperative and immediate assistance.

The pain-producing abdominal conditions which I offer for consideration in this paper are appendicitis, cholecystitis, perforative gastric and duodenal ulcer, intestinal obstruction, ruptured ectopic pregnancy, acute salpingitis and ureteral calculus.

APPENDICITIS

The pre-operative diagnosis of acute and chronic appendicitis can not always be made.

Some etiological factors to be considered are obstinate constipation, diseased tonsils and adenoids, infections of the teeth and gums, gall-bladder infections, ulcer of stomach and duodenum, blood-born typhoid bacilli, errors in diet, oxyuris and tricocephalus, and trauma.

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The classical symptoms of acute appendicitis are pain, nausea and vomiting, local sensitiveness on palpation, elevation of temperature, and leucocytosis, in the order given.[1]

Morris[2] has found two differentiating points between acute and chronic appendicitis, and between either form of appendicitis and pelvic irritations and infections. An inch and a half to the right of, and slightly below, the navel is found a hypersensitive point on deep pressure which is not found in pelvic disorders unless there is a corresponding point on the left side. The second feature which distinguishes chronic appendicitis from either the acute form or pelvic disturbance is persistent distention of the ascending colon with gas, and which he calls the "cider barrel" sign. Many irregularities have been found in appendicitis with which it is well to be familiar.

Crook[3] relates a case of left-sided appendicitis in which operation revealed a large abscess containing a gangrenous appendix entirely sloughed off.

Black[4] says pyloric spasm is most frequently confused with chronic appendicitis and that in cases of peptic ulcer with pyloric spasm it is sometimes impossible to make the differentiation from chronic appendicitis. He ascribes epigastric food pain in chronic appendicitis to reflex pyloric spasm.

Randolph[5] discusses sciatica as an initial symptom of appendicitis and relates a case in which the distal end of the appendix was found against the spinal column in close proximity to the upper division of the lumbosacral cord.

Palamountain[6] had a case of visceral transposition in which there was a gangrenous appendicitis of the left side.

Aaron[7] noticed roentgenoscopically a pyloric spasm induced by pressure over the appendix.

Waller[8] reports a case of appendiceal inflation in which the patient was completely anesthetized and the appendix was seized, when a straining impulse inflated the appendix to the diameter of two inches.

Wade[9] found a case of congenital inguinal implantation of the appendix, and says Coley found this condition present in 1.65 % of 2,200 cases.

Leven[10] says stretching and dilatation of the stomach, as in gastroptosis, may cause a pain at McBurney's point simulating appendicitis.

S. Trinca[11] reports a case of appendicitis due to hydatid.

Bastedo[12] produces pain at McBurney's point in chronic appendicitis by colonic inflation, and Permon[13] has found pressure in the left iliac fossa productive of pain at McBurney's point when there is much appendix disease.

Jelks[14] has known a number of pellagrins in the Memphis district operated upon under the mistaken diagnosis of appendicitis.

Rackey[15] uses a transverse incision as a routine in appendicitis and details a number of advantages, in his opinion, particularly in pus cases.

Neill[16] furnishes a series of drawings illustrating Cullen's method of mobilizing a retrocecal or adherent appendix when working through a gridiron incision. Locating the base of the appendix by following the cecal band, he pushes a blunt Kelly forceps through the meso and draws back a piece of tape. He grasps the ends of this tape, using it as a tractor to mobilize the proximal end when another section of the appendix is being worked with. This maneuver is repeated until the distal end is reached, when the meso is clamped off and the routine technique is observed.

Parks[17] illustrates a simple method of invaginating the appendix stump without assistance. He says imagine the face of a clock with the stump representing the center and 12 being the mesenteric side. Begin the needle bites at 12 and continue at 10, 2, 8, and 4, completing at 6. A pull on the 12 and 6 ends inverts the stump and the ends are tied.

Guthrie[18] commends the Hammerer incision for chronic appendicitis in women, as he has found 85 % of these cases have sufficient trouble in the tubes and ovaries to require operative interference, and this incision facilitates manipulation.

Deaver[19] stresses the exceeding unwisdom of giving a purgative in acute appendicitis.

Willis[20] claims that more than 10 % of supposed appendicitis cases turn out to be ureteral calculus, and emphasizes the importance of radiographic examination.

In 1,700 acute cases, Deaver's[21] compli-

cations were fecal fistula in 42, secondary abscess in 30, and intestinal obstruction in 27.

Williamson[22] had a case of fatal hemorrhage from erosion into the iliac artery by a drainage tube.

In Morf's[23] analysis of 822 Cook County Hospital cases, it was found that about one-third of the deaths were due to peritonitis.

Moore[24] has had a number of cases of salpingitis secondary to an infected appendix.

Matas[25] had an appendix cyst weighing 52 ounces.

Hitchings[26] did an appendectomy in which the appendix was filled with bird shot and weighed 125 grains.

Waller[27] found an appendix containing a number six shot.

Frisch[28] reports from the literature 13 cases of hematuria with appendicitis.

I wish to report three cases which are widely at variance with the usual picture.

CASE REPORTS

Case 1.—Mrs. M. P., age 19, married, had had a baby 16 months before. No previous history of trouble. She was taken March 17, 1919, with general malaise. No nausea nor localized pain. Temperature 100°; pulse 120. The next morning at 8 her temperature was 103.6°; pulse 116. No pain at McBurney's point, no abdominal rigidity, leg flexion nor nausea. Considerable pain at the splenic flexure of the colon, markedly increased by pressure at McBurney's point. She had albumin and casts in her urine. Her blood showed 9,800 leucocytes; small mononuclears, 6 %; large mononuclears, 3 %; and polymorphonuclears, 91 %. She did not develop any nausea, pain at McBurney's point, abdominal rigidity nor leg flexion. I operated upon her at 9 p. m., finding a ruptured appendix normally located; copious pus and very little walling off anywhere. For the first 48 hours I kept her in an accentuated Fowler's position, on her right chest, and gave her an intermittent saline drip. Her temperature reached normal the night of her operation, did not run up again, and her recovery was uneventful.

Case 2.—Mr. E. B. H., age 58, a traveling man, unmarried. No previous history of similar trouble. On April 3, 1919, he ate peanuts in the afternoon and had some epigastric distress, which cleared up by supper and he ate a hearty meal. He had a good night and ate an average breakfast. At 9 p. m. there was a return of the epigastric distress and he set out for home. saw him at 4 p. m. He had general soreness and discomfort in his upper abdomen, nausea and vomiting; no pain at McBurney's point except on pressure; no abdominal rigidity nor leg flexion; temperature 98°; pulse 72; and leucocytes 18,000. I opened him at 9 p. m., finding a long appendix as large in diameter as a small corn cob, unruptured, not walled off and considerable peritoneal fluid. Temperature and pulse remained normal and the patient made an uneventful recovery.

Case 3.—Mrs. M., age 24, married, had had a normal delivery at 19 and an abortion at 20. Four attacks of appendiceal colic had occurred in three years, each attack lasting several days. I first saw her March 14, 1919, when her temperature, pulse and respiration were normal. She had been vomiting and having cramping pains at McBurney's point for five days; no abdominal rigidity nor leg flexion; 7,400 leucocytes; small mononuclears, 3 %; large mononuclears, 1 %; polymorphonuclears, 87 %; and eosinophiles, 9 %. Operation revealed a very long and large appendix, on a strut with hard impacted fecal matter. Recovery uneventful.

CHOLECYSTITIS

Bedenstab[29] asserts from an analysis of 500 cases operated upon by Quain and Ramstadt that cholecystitis can be diagnosed in 90 % of the cases from the history alone; and that in more than 95 % of these cases the diagnosis of gall-stones is an established fact when five so-called cardinal symptoms are present, namely, radiating pains, vomiting, belching, dyspnea and prostration.

Gall-bladder distention produces sudden, severe epigastric pain, with radiation to either the right or left costal arch, through to the back or to the region of the shoulder blade, to the right or the left shoulder, which, after a longer or shorter terrific spell, ceases as suddenly as it appeared. If the word "cramps" is used in eliciting the history it is more likely to be correctly interpreted.

Vomiting, usually of bile, seldom affording relief until the flow of bile has ceased to regurgitate into the stomach, is a cardinal symptom of acute cholecystitis. Irregular, recurrent belching, not associated with food intake, coming on suddenly, of short duration, followed by prompt relief, is diagnostic of cholecystitis, and is to be distinguished from belching which comes on at a given time after meals and continues until gastric digestion is finished. Deep respiration produces sharp, stabbing pain during gall-bladder colic, limiting excursion of the diaphragm, resulting in dyspnea, which disappears when the colic passes.

Great prostration, anxiety, free perspiration and a fear of impending death are usually present during an attack of gall-bladder colic.

Smithies[30] classifies 1,000 cases of cholecystitis demonstrated by operation. He found it impossible to distinguish before laparotomy between uncomplicated cholecystitis and cholelithiasis; that the type of colic was non-distinctive; and that jaundice was present in both in practically the same percentage. The type of pain is usually characteristic, as it recurs irregularly in a patient otherwise well without any apparent cause. This is contradistinctive of peptic ulcer, which has a definite food relation, and which is usually benefited by food ingestion, vomiting or an alkali. Gall-bladder colic pain is more severe than any other pain except that of perforation of gastric or duodenal ulcer. In 74 % the pain was located in the right upper quadrant, in 32 % it was not transmitted, and abdominal tenderness was present in 883 cases. Cholecystectomy is the operation of choice.

PERFORATIVE STOMACH AND DUODENAL ULCER

Sullivan[31] reports a series of 20 operated cases of perforated stomach and duodenal ulcers. He groups 7 diagnostic symptoms in the order of frequency as being pain, tenderness, vomiting, rigidity, history of previous ulcer symptoms, anxiety and restlessness, and increasing pulse and rise of temperature.

The pain is characteristic, being sudden, violent, sharp, cutting, burning, bursting, stabbing and unyielding. Its location is usually epigastric or supra-umbilical, 'though it may be elsewhere, and its radiation may be in any direction.

The tenderness is acute, easily elicited, unmistakable, and, if seen early, generally over site of perforation.

Vomiting is a valuable symptom and occurs early, 'though vomiting may occur in any abdominal condition, and Eliot reports two cases without vomiting.

The rigidity is early, characteristic, and increases with the length of time elapsing from the onset. Deaver says: "There is no condition in which the upper abdominal rigidity is so early and so marked as in perforated ulcer."

Sullivan states the case quite concisely: "Given a patient who is taken suddenly ill with an acute cutting or piercing epigastric pain which is continuously agonizing and accompanied by a unique or marked rigidity of the abdominal muscles, particularly of the upper half, and from whom a previous history of indigestion is obtained, the most imperative indication is operation. Differential diagnosis may have scientific value, but the moral value is dependent upon early operation. There is no excuse for delay in the presence of such symptoms. It is true that acute appendicitis, perforation of the gall-bladder, acute pancreatitis, and acute intestinal obstruction may give an almost identical picture. However, the treatment in each of these cases will be early operation."

The question of routine gastro-enterostomy for perforated gastric or duodenal ulcer is a moot point. Gibson rejects it; Deaver favors it; while W. J. Mayo individualizes. This decision should be left to the case in point. The deciding factors are the condition of the patient and the duration and location of the perforation. The ultimate condition of the patient will frequently be more satisfactory with a gastro-enterostomy, but his immediate survival should not be hazarded by the time consumed in this operation. The matter of drainage is an individual proposition. The abdomen should be cleaned out with a suction apparatus and not sponge-mopping. It is more effective and lessons the risk of future adhesions. Late cases should be drained. Early ones, those operated upon under six hours, should usually be closed without drainage.

INTESTINAL OBSTRUCTION

Intestinal obstruction,[32] whether adynamic, dynamic or mechanical, is recognized by pain, nausea, vomiting and cessation of bowel movement. The pain rapidly becomes cramping and wave-like in character. The vomiting of dynamic and adynamic ileus, being purely reflex, gradually subsides. In mechanical ileus the vomiting is a regurgitation due to obstruction and increases with time. A paralysis of peristalsis associated with general peritonitis should be distinguished from one due to volvulus or strangulation of the bowel. The cases of ileus which may get well without surgical interference are those belonging to the dynamic and adynamic groups.

A local peritonitis may cause a septic adynamic ileus. A general peritonitis always does. The intestinal muscularis is paralyzed by the action of the infection on the surface of the bowel. Sympathetically, the varieties of adynamic ileus are quite different. Pain is usual, nausea and vomiting frequent. Some patients have lo-

cal sensitiveness and some marked tympany. The diagnosis must be worked out by the careful analysis of collateral points.

In mechanical ileus the picture is more clear cut. Here there is always pain, recurrent and colicky, then nausea and vomiting. The vomiting persists and increases, whereas in the other types of ileus the vomiting diminishes. Borborygmus is present. The peristaltic waves beat against the obstruction, causing small explosions. In mechanical ileus without infection this condition is always present and is sometimes so severe as to be heard several feet away. By tracing this sound around carefully with the stethoscope one may be able exactly to locate the point of obstruction, as it is just where the explosions occur with maximum intensity. At this point the bowel muscle relaxes and there is a backward rush of gas and fluid, which has been forced under pressure against the obstruction. The vomiting not only persists, but is distinctive in type. At first it is a pure overflow, but becomes increasingly violent and profuse until it is copious and projectile. Temperature and leucocytosis are never primarily present in mechanical ileus. Palpation and percussion may locate the point of obstruction by determining the point of greatest resistance and dullness. This is not altered by change in position, as may be the case in paralytic ileus. The procedure is a matter of diagnosis. Surgical interference is unavoidable in mechanical ileus and should be immediate. In the adynamic type it is a question of individual case decision.

RUPTURED ECTOPIC PREGNANCY

The symptoms of a ruptured ectopic pregnancy may be clearly diagnostic or quite baffling. A sudden, sharp, agonizing pain in the side, followed by pallor, small, rapid pulse, collapse and air hunger is not likely to be mistaken for anything else. In cases less pronounced, the differentiation is sometimes hard to make between a ruptured ectopic pregnancy and an incomplete or threatened uterine abortion.

In border-line cases, examination should be made under ether, and, when operation is agreed upon, a dilatation and curettage may classify the situation.

The diagnosis between an old ruptured ectopic pregnancy and a pelvic mass is frequently impossible but of no consequence, as they are both surgical conditions and can be properly handled when opened up. A ruptured ectopic pregnancy should have prompt operation. It is well to be prepared for transfusion. The amount of tissue to remove is a matter of individual judgment, but the route should be abdominal.

ACUTE SALPINGITIS

Acute salpingitis is to be differentiated from appendicitis, extrauterine pregnancy or a twisted pedicle cyst.

In salpingitis the pain is usually bilateral, lower than the appendix, symptoms less progressive, while bimanual palpation generally elicits a characteristic pelvic tenderness.

In extrauterine pregnancy the pain is sharper, the abdominal rigidity and tenderness less[33] marked, vaginal examination reveals less tenderness, and leucocytosis is generally lower.

A twisted pedicle cyst can not be differentiated from salpingitis when there is infection and peritonitis. The history of the case is important. Bimanual palpation shows a bilateral trouble in salpingitis, usually unilateral in twisted pedicle cyst, and the cyst mass is generally movable, in contradistinction to an acute salpingitis and its collateral trouble.

Where the diagnosis of acute salpingitis is unmistakable, operation may be postponed pending the outcome of other treatment. But where differentiation can not be made the case should be operated upon and the patient given the benefit of the doubt. A twisted pedicle cyst is always an immediate surgical proposition.

URETERAL CALCULUS

Right ureteral calculus may give pain at McBurney's point, nausea and vomiting, but it should be differentiated from appendicitis by hematuria, absence of leucocytosis, normal temperature, less leg flexion and abdominal rigidity, x-ray findings and ureteral catheterization. Ureterotomy should only be considered as a last resort. Primarily the patient should have ureteral catheterization, irrigation and dilatation. Ochsner's plan may be tried, of giving two ounces of glycerin in one pint of sour lemonade every night for three nights and one-half pint of distilled water every hour.

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AUTHORS' ABSTRACTS

Surgery

Imperforations of the Rectum and Anus and Their Treatment. J. Rawson Pennington, Chicago, Ill. Illinois Medical Journal, Vol. 35, No. 4, April, 1919, p. 176.

The writer collected 49 examples in 292,810 new-born. Why these alone should be malformed is unknown. Whatever the cause, it operates also in animals. Hereditary transmission is known. Also occurrence in twins is reported. Sexes are about equal—347 boys and 292 girls. There are three classes: the rectum opening into the bladder, etc.; non- or imperfect development of postallantoic gut; ditto of proctodeum. Of 493 cases, there were 167, 145, and 181 in the respective classes.

The indications are to open a channel for the feces and place it at or near the normal site of the anus. Puncture is blind, unscientific, and dangerous. Incision and perineal dissection is the first stage. The bowel is still to be dealt with. A blind pouch may be brought down to the perineum (in 90 %) or by colostomy. This latter may be done for immediate relief, leaving the imperforation for the future. It is preferable to bring the bowel down to the perineum before opening it, but there is no need of delay, as the contents for a day are sterile. For openings into bladder, vagina, etc., make a plastic through the perineum or abdomen.

The prognosis is serious. There are often associated malformations, such as a patent foramen ovale, which alone are fatal. The stercoral stasis favors absorption of toxins and migration of micro-organisms, weakening patients and preventing their overcoming intercurrent diseases. The earlier the operation, the better the result. Imperforation appears to react even before birth and death is frequent even after operation.

Pyeloscopy. W. F. Manges, Philadelphia, Pa. American Journal of Roentgenology, April, 1918, p. 165.

Pyeloscopy, or fluoroscopic control in injection of an opaque solution into the kidney pelvis, adds to comfort and safety of the patient and accuracy in diagnosis. Pyelograms are made for more detailed study. The apparatus must include a fairly fine focus tube and control permitting fluoroscopy one instant and plate exposure the next. Rays of low penetration and fairly high milliamperage give the best fluoroscopic views, which need be only momentary. The usual fluoroscopic technique is sufficient for most cases. The opaque catheter is readily seen. Occasionally one actually sees the shadow of the kidney distinctly. When the catheter is high, it should be retracted partly before injection, as a catheter in the kidney pelvis causes pain, especially on deep inspiration. Injection should be controlled by gravity. The rate of flow into the kidney pelvis must be slow, as rapid filling causes great pain even though the pelvis is not overdistended. Very slow filling occurs when the catheter leaks, when the solution flows back into the bladder, or when some part of the injecting apparatus is of too fine a caliber. These factors are overcome by elevation of the vessel containing the solution. Overdistention should always be avoided. One stops the flow of solution when the calices first appear in sharp outline and before real pain appears. On the other hand, the patients often complain too early in order to avoid pain. The fluoroscope offers a check to this. In case of stone in the kidney only a small amount of injection serves to localize the stone accurately. Occasionally dense gall-stones are mistaken for right kidney stones. This method serves to differentiate them, for one can manipulate gall-stones independent of the kidney. The method is especially valuable in movable kidney, and in pus kidney where overdistention is particularly dangerous. There is no contradiction to the method under general anesthesia.

The Need for Improvement in Teaching Obstetrics. Calvin R. Hannah, Dallas, Tex. Texas State Journal of Medicine, Vol. 14, No. 9, January, 1919, p. 297.

The profession was slow to adopt good technique and aseptic methods in obstetrics, much of which was due to poor teaching and an inability to develop an obstetrical conscience in the student. The author thinks too much may be taught, making the student's mind a storehouse of memories and not one of facts. Consequently when action of real worth is required, the student feels inadequate to assume the responsibility. He emphasizes asepsis and antisepsis to such a degree that it becomes a part of the student as much so as it does of the high-class surgeon. He implores the ignorant to prepare; the careless to be on the alert; and to give to the interne an intensive obstetrical training on a modern basis to the same degree as a surgeon is prepared. He requires his students to carry a sterile gown, leggins, a dozen towels, rubber gloves, sponges, and other sterile articles with them in outdoor services. This teaches and develops in the student an obstetrical conscience, so much lacking among our profession. He insists upon diagnosis of positions and existing conditions. Give justice, not sympathy, and to do this you must know how to make a diagnosis. In no subject of medicine is the art of diagnosis required more often, and upon it depends largely the success of handling the case. He condemns the meddlesome midwife, so much of whose fault is due to the inability to diagnosis, or many times carelessness on the part of the doctor. Unnecessary operations are condemned because time is not given or "snap-shot" judgment is taken before the patient has been given an opportunity to test her powers of delivery. In all, he counsels the wisdom of students so preparing themselves that the woman of gestation will be given the same opportunity to be free of morbidity as if she were afflicted with any other disease and properly treated. He wants the student so educated as to put obstetrics on a higher plain which will educate the laity to expect better service, and this publicity will teach the profession that they must prepare.

The Cause of the Reactions Following Transfusion of Citrated Blood. C. K. Drinker and H. H. Brittingham, Boston, Mass. Archives of Internal Medicine, Vol. 23, No. 2, February, 1919, p. 133.

Reaction figures are given for various methods of blood transfusion, those for the citrate method apparently exceeding those for whole blood transfusions done by other methods. The technic of operation and the basis of reaction used is discussed.

The evidence shows that the character of the sodium citrate used has no influence upon the number of reactions. Citrated plasma of proper group is shown to be non-toxic. Injection of washed whole-cell contents of blood suspended in normal salt solution gives a high percentage of reactions. If these are freed from most of the platelets and white cells, the number of reactions drops 20 %, so one factor in producing reactions is apparently a change in the platelets, part of the process of coagulation. A second factor is a direct action of the sodium citrate on the erythrocytes, evidently promoting hemolysis. This is shown by the fact that the injection of erythrocytes untouched by citrate is also followed by 20 % less reactions than that of citrated erythrocytes, or 40 % less reactions than occur following the use of untreated citrated blood. A third factor in causing reactions is a very rare unexplained incompatability which escapes "in vitro" detection.

A Torn Cervix vs. Uterine Inertia. Eugene R. Corson, Savannah, Ga. Medical Record, August 10, 1918.

Dr. Corson contends with emphasis that a postpartum hemorrhage in a very large majority of the cases is due to a torn cervix, and that uterine inertia, as the term is understood by the profession, is much of a myth.

The uterus is a muscular bag with a good strong draw-string. Tear this draw-string and focus of contraction, and not only the branches of the uterine arteries are torn open, but the uterine contractions have lost their *point d'appui;* the lever has lost its fulcrum. A normal uterus without any cervical tear, contracting firmly after expelling the child, compresses the uterine arteries and practically stops hemorrhage from the placental site; but the torn uterus contracts but half-heartedly, and there results a double hemorrhage, one from the torn vessels and one from the placental site.

The cervix should be drawn down by sponge holders; the tear or tears carefully sewed up, and all hemorrhage will cease; and the danger of sepsis become reduced to a minimum.

Irritable Bladder in Women. Charles A. L. Reed, Cincinnati, Ohio. The Journal of the American Medical Association, Vol. 72, No. 5, February 1, 1919, p. 332.

Many cases of irritable bladder in women defy the various so-called conservative forms of treatment. Irrigations, local catheterizations through the cystoscope, sustained drainage, all associated with alkaline medication, fail to bring, at the most, anything but temporary relief. A careful cystoscopic examination of these cases generally reveals the presence of an area of small punctate ulcers, first described by Hunner, which have been named "elusive" ulcers because of the difficulty experienced in finding them. They are chiefly located in the upper anterior wall of the bladder, in the triangle defined by the orifices of the ureters and the urethra.

These cases are incurable by any other means than incision of the ulcer-bearing area. He reports a number of cases to sustain this view. The operation consists in an approach to the bladder through the abdominal wall. In some cases the peritoneum may be dissected up and the bladder wall thus be exposed. The affected

area, which is recognized by circumscribed thickening and induration, is then removed.

Dr. Reed has found, however, that the more practical operation is by the transperitoneal method. The lower abdomen is opened in the usual way in the median line. The vesical peritoneum is then divided vertically and dissected back latterly, far enough to expose the wall of the bladder which is distended with water introduced before the beginning of the operation. As soon as the indurated area is located, however, the water is permitted to drain off through the self-retaining catheter and the excision of the ulcer-bearing area is then effected.

Direct through-and-through drainage may be employed or urethral drainage alone may be thought to be sufficient. If the former is used, the margins of the vesical peritoneum are attached to the margins of the parietal peritoneum and the tube is inserted. If the latter be employed, the bladder wall is carefully closed, care being taken that none of the suture material be permitted to present on the intra-vesical surface.

It has been found after ixcision of very considerable areas of the bladder wall that the bladder itself speedily regains its capacity.

The cases reported by Dr. Reed, all of long standing, had failed to receive lasting benefit from conservative treatment, but all had recovered following operation.

Post-Influenzal Amenorrhea. A. R. Hollender and W. M. Gratiot, Mineral Point, Wis. Memphis Medical Monthly, Vol. 39, No. 11, November 1, 1918, p. 241.

That post-influenzal amenorrhea is of frequent occurrence has been definitely established since the recent pandemic. Women found that the absence of the physiological process in some way affected their general activity. Among the married, there was the unwarranted suspicion of pregnancy.

The causes of the change are not clear. For convenience and study the authors have classified the variety of cases of amenorrhea as follows:

Menstruation (after influenza) delayed more than one month.

1. Constitutional causes
   - Lessened vitality
   - Secondary anemia
   - Excessive nasal hemorrhages or other bleeding
   - Protracted cases of albuminuria during or after influenza or pneumonia
   - Unusual nervous symptoms, delirium, or a persistently high temperature during acute sickness
   - Prolonged administration of certain drugs
2. Local causes
   - Excessive uterine hemorrhage during sickness, abortion
   - Secondary involvement of the ovaries
   - Secondary infection of the vagina or cervix accompanied by abnormal discharge

Certain characteristic symptoms present themselves. In several women who suffered from a profuse vaginal discharge which became very distressing and excessive about the usual time of menstruation, a fear was created of having contracted some serious disease of the sexual organs.

The greatest problem has been in dealing with the virgin. Practically all have a return of the function in from three to six months, while those in whom the cause is obscure have so far resisted every form of treatment. The care must be more or less individual, but good results have been experienced by the administration of corpus luteum extract, particularly in those cases where there was a return of function, but scant and irregular menstruation.

Cyclic Changes in the Interstitial Cells of the Ovary and Testis in the Woodchuck (Marmota Monax). A. T. Rasmusen, Minneapolis, Minn. Endocrinology, Vol. 2, No. 4, October-December, 1918, p. 353.

A review of the literature on changes in the interstitial cells of the ovary in relation to the sexual cycle shows that there are many conflicting observations. In the ovary there is much difference of opinion not only as to the presence or absence of these elements in particular species, including human, but also as to changes which take place in this tissue ("interstitial gland") in animals where it is well developed. In general, hypertrophy during rut and pregnancy is described.

The original work was done on the woodchuck, which has only one litter a year. There is no overlapping of cycles, which are separated by months of profound dormancy, thus simplifying matters. There is a slight gradual hypertrophy during hibernation with a rapid and extensive enlargement in the spring after waking up and during rut, followed by atrophy during and subsequent to gestation. There is no sudden change at the onset of hibernation, the animal stage having been reached long before lethargy commences.

While the hypertrophy has been regarded as an expression of internal secretory activity, it is also plausible that it is a result of hyperemia or other periodic alterations in the ovary.

Complete atrophy of some cells appears to be compensated for by migration from the germinal epithelium of cells which, together with the ordinary stroma cells, probably constitute a source of new interstitial cells.

The interstitial cell cycle of the ovary parallels in a general way that of the homologous cells of the testis, a restudy of which is included.

EYE, EAR, NOSE AND THROAT

TONSILLECTOMY—INDICATIONS AND CONTRAINDICATIONS

By Thos. A. Cheatham, Jr., Ph.G., M.D., Birmingham, Ala.

The complete removal of tonsils may well be looked upon as a major operation; and in deciding the advisability of tonsillectomy, all points for and against the procedure should be considered without prejudice. Most tonsillar conditions are treated primarily by the family physician, who has probably expressed an opinion to the patient before referring him to the specialist, but wisely leaves the final decision to the man who must satisfy an inquisitive mind as to the reasons for operation and the degree of benefit to be derived. Often the patient remarks, "My doctor advises the removal of my tonsils. I have not had a sore throat and can not see why I should undergo an operation for something that is not troublesome." Or the question is asked, "I hear so much about bad tonsils these days. Do you suppose that my ill health could be due to the condition of my tonsils?" An answer necessarily involves an inquiry into the past and present symptoms of any and all physical ailments from which the patient has suffered, and a statement based upon individual findings. However, the indications and contraindications for tonsillectomy may be classified under a few fairly well-defined heads, some one of which will apply to the majority of cases coming under observation.

The faucial tonsils are under consideration as the most important parts of Waldeyer's ring. The intimate association by chains of adenoid tissue connecting the faucial, pharyngeal and lingual tonsils make it impossible to isolate, from a surgical point of view, these tissues in every case as separate and distinct structures which may functionate or become diseased independent of other parts of the ring. Disease of the pharyngeal tonsil rarely exists without involvement of the faucial tonsils; and to remove one without the other is to invite a second operation before the desired result is obtained. This is especially true in childhood. The lingual tonsils often become diseased and give rise to symptoms which may necessitate excision but do not produce the great variety of systemic conditions attributable to the faucial and pharyngeal tonsils.

The true function of the faucial tonsils, whatever it may be, is not considered as a factor for or against removal. The functional theories advanced are many and varied, and there is no definite consensus of opinion regarding them. However, there is no proof that loss of tonsillar tissue has ever been detrimental to the development or health of any part of the human economy, and it is, therefore, reasonable to conclude that if the tonsils have a definite use, there is a compensatory reaction in other tissues which assumes this function after the complete tonsil operation.

INDICATIONS

1. Chronically Hypertrophied Tonsils.—This is the most frequent condition met with among the tonsillectomies advised, but, in itself, does not constitute a reason for removal. A roomy throat will accommodate quite an excess of tonsillar tissue where a throat normally narrow or shallow would be disastrously obstructed by a tonsil of the same size. Surgical intervention becomes necessary only when there is interference with phonation, deglutition, respiration or audition.

(a) When the voice begins to lose its usual clearness of tone or the pronunciation of lengthy words becomes a matter of effort, when final *d* is bungled into a *t* and the resonating chambers of the nose fail to receive and modulate the vibrations projected by the vocal cords, large tonsils should be removed.

(b) If, on examination of the anterior nares, the turbinates and septum are found to be separated by enough space to permit adequate aereation and drainage of the nares and accessory sinuses, and yet there is a dripping into the naso-pharynx and habitual mouth-breathing, the trouble will usually clear up after complete removal of the tonsils and adenoids. Any obstruction of the upper air passages leads

to sub-oxidation through faulty preparation of air preliminary to the exchange of gases in the lungs—proper humidity and temperature are essentials.

(c) Swallowing with difficulty accompanied by a sensation of having the throat gummed up and often a persistent, nonproductive cough, is sufficient balm to quiet the most anti-operative conscience and the removal of existing chronically enlarged tonsils is a matter of common sense.

(d) Pressure on the pharyngeal end of the Eustachian tube may cause a partial or complete closure and lead to otalgia, otorrhea, otitis media, tinnitus aurium and deafness. However, when this condition exists, it is usually from an inflamed condition of the palatopharyngeus muscle through contiguity of diseased tonsillar tissue extending along the pharyngo-palatine fold of the tube and then to the middle ear. Tonsillectomy is indicated when the muscular mechanism which controls the patency of the tube is impaired either by direct pressure or degeneration of the fibres of the palatopharyngeus following prolonged or repeated inflammation.

2. Repeated Attacks of Acute Tonsillitis.—Tonsils seem to be void of the faculty of acquiring immunity to the slightest degree and are always left in a weakened condition following inflammation, which makes them more susceptible to bacterial invasion with each acute attack, whether it be the same kind of infection or a variety. Often there is an intermittent period in which the tonsils are apparently quiescent for an indefinite time. Then with the slightest provocation an acute inflammation flares up and the patient is prostrated within a few hours and incapacitated for work for several days. With each attack the submaxillary and deep cervical glands are taxed more severely, and being weakened by previous overwork, react more slowly and less efficiently. When the faucial tonsils cross the dividing line where physiologic self-protection gives way to overpowering pathologic invasion, the condition becomes analagous to that of the sick soldier still on duty but weakened in morale by continued reverses. He turns traitor through sheer inability to fight even a poor battle and unwittingly creates a vulnerable point, invites destruction of the defensive, and opens the way for invasion to parts beyond. When tonsils become "traitors," to remove them is to strengthen a weak spot. A barrier of non-functioning scar tissue is far preferable to a gland actively pathologic.

3. Persistent Glandular Involvement Following Tonsillitis.—Enlarged or inflamed submaxillary and deep cervical glands which do not react energetically after an attack of tonsillitis has apparently subsided and fail to respond to rational treatment, are in all probability still actively engaged in an attempt to destroy the toxins generated in the tonsils. This is especially true of submerged tonsils; and close examination usually reveals cherry-red pillars studded with multiple granular follicles of a translucent, yellowish cast, somewhat hypertrophied tonsils, increased vascularity and pharyngeal inflammation of a mild, chronic form. Following tonsillectomy, which is advisable under such conditions, there is sometimes a violent reaction which is temporarily alarming and causes the operator to question the wisdom of this step. However, the choice is the lesser of two recognized dangers, and until the source of the trouble is cleared out we can not expect a cessation of glandular and systemic involvement.

4. Chronic Caseous Degeneration.—The funnel-shaped crypts of the tonsils vary greatly in size and contour. Infected mucus, debris, etc., fill these crypts and are often retained long enough to retrogress into a foul-smelling, yellowish, caseous material which may be expelled en masse during an explosive cough or can be removed by a tonsil hook or syringe. There is a tendency for the crypts to close over these cheesy accumulations, blocking the open end and retaining the infected material under the most favorable conditions for bacterial proliferation and absorption of its products. Usually many crypts are involved in this process and the tonsil becomes riddled with pus and will eventually give rise to any of the conditions now recognized as originating from focal infection. This is a positive indication for tonsillectomy as a prophylactic measure—surgical insurance against the ravages of slowly absorbed toxins.

5. Recurring Peritonsillar Abscesses.—Peritonsillar abscess does not occur as a

simple inter-capsular empyema, but always involves the surrounding tissues to a marked extent. Tonsils, pillars and capsule are left in a weakened condition abnormally susceptible to future invasion of pathogenic bacteria. When the abscessed condition recurs after one attack, it is wise to enucleate the tonsils as soon as the inflammation has thoroughly subsided and there has been no rise in temperature for several days.

6. Chronic Inflammation of Adjacent Tissues.—Persistent subacute or chronic pharyngitis or laryngitis usually complicated by recurring acute exacerbations may be the direct result of extension of inflammation from diseased tonsils through the lymphatics connecting the diffused follicles of adenoid tissue scattered through the pharyngeal and laryngeal mucosa. Tonsillectomy will destroy the base of supply of irritant toxins and clear up this condition in many instances.

7. Tuberculosis.—There is a great diversity of opinion concerning the tonsil operation in the presence of tuberculous conditions and no set rule can be fixed. Many tuberculous patients have doubtless been benefited by tonsillectomy, but to say that tubercle bacilli always enter the system through the tonsils, normal or diseased, and to operate as a routine measure would be to admit a very limited knowledge of tuberculosis and the individual requirements of those infected. Cases which may be benefited by tonsillectomy must be selected with due regard to the stage of the tuberculous process, the presence of complicating conditions, the vital resistance of the patient, status of weight loss or gain, and, above all, the probable tonsillar condition which would justify its removal in each particular case. Where the tonsils are diseased beyond question and the patient is running no appreciable temperature but is in fairly good condition, the complete removal of tonsil is certainly indicated.

As a matter of particular interest because of his unusual opportunities for observing tonsillar conditions in tuberculous patients, Dr. W. G. Harrison, of Birmingham, is quoted as follows:

"So far as I am able to gather the statistics, I have removed the tonsils of something like sixty people who have had pulmonary tuberculosis and I have formed some very definite opinions—probably more definite than would be justified by the small number of cases.

"First, I believe the tonsils should be removed in every case where there is evidence that the patient may be suffering from septic absorption, unless the patient is extremely debilitated. In the few such instances I have washed out the tonsil crypts weekly for a few months and then removed the tonsils after the patient has gained some flesh.

"Second, it seems especially bad to administer ether in cases of active tuberculosis and I find myself employing a local anesthetic exclusively in such cases.

"Third, I have had no reason to believe the removal of tonsils has ever precipitated an acute miliary tuberculosis, nor have I reason to believe the operation has proven injurious in a single case."

8. Tumors.—Malignant tumors may occur primarily in the tonsils. An early recognition and prompt removal may lead to a permanent cure, but more often we are confronted with a long-standing condition which has been mistaken for a chronic hypertrophied process or a persistent ulceration which has failed to respond to any and all local or systemic treatments. Sarcoma is probably the growth most frequently met with, no doubt due to the fact that the tonsil is more active during childhood and youth, and retrogressive tendencies up to mature adult life seem to have a special predilection for connective tissue. Carcinoma may occur and manifest itself chiefly in the form of a rigid, irregular infiltration that soon undergoes degeneration and becomes a "carcinomatous ulcer" with a remarkably hard and thickened base. Of the benign tumors which may necessitate tonsillectomy because of their rapid growth and consequent interference with phonation, deglutition, audition or respiration, may be mentioned fibroma, papilloma, and myxoma arising from the peritonsillar tissues. Keratosis or cysts may also demand operative interference.

9. Focal Infection.—The baneful influence of focal infections is no longer a matter for argument and the fact that the tonsils are second only to the teeth as infective foci is now established beyond a doubt. Bacterial invasion of the tonsil is not only through the epithelial covering of exposed parts, but directly through retention in the crypts of debris, mucus, saliva, etc., infected by the streptococcus, staphylococcus, pneumococcus, micrococcus catarrhalis, tubercle bacillus, bacillus influ-

enzae, etc., which find favorable conditions for growth, accumulation and absorption of toxic products. These toxins produce systemic symptoms varying according to the predominance of the micro-organism or combinations of micro-organisms producing the infection. This condition may well be referred to as a "cold" abscess of the tonsil in that it seldom gives rise to local manifestations of inflammation such as redness, swelling, elevated temperature and pain, but remains apparently quiescent while its products are being absorbed and carried to more or less remote parts of the body and there set up a pathologic process.

The diagnosis of focal infection of the tonsils should be established by eliminating a similar process in the teeth, accessory sinuses, middle ear, gall-bladder, appendix, etc., with due consideration for past and present conditions of the tonsil itself. The focus may occur in one or both tonsils. The physical appearance of a tonsil is often no index to its true condition. Some of the most innocent, normal-looking tonsils have proven to be pockets of virulent pus; and tonsils which seemed to be above suspicion have often been convicted of pathogenic activity only after removal. On the other hand, focal infections can not be blamed for everything and even in the presence of tonsils which are far from normal, all other possible etiological factors must be considered and existing pathological conditions corrected co-incident with the removal of the offending tonsils.

Among the diseases sometimes caused by focal infection of the tonsils may be mentioned acute articular rheumatism, muscular rheumatism, endocarditis, nephritis, thyroiditis, tuberculosis, bronchitis, cervical adenitis, epilepsy and anemia.

10. Subnormal Children.—This heading is not included with any desire to "start something," but for the specific purpose of pointing out the absolute need of tonsillectomy in certain cases. The child who whines habitually, who is forever and eternally irritable, is always deficient in weight, invariably shows a retarded mentality, takes no interest in the society of other children, catches cold easily, has croup or earache frequently, is the first to have every infectious disease that invades the neighborhood, is always taking medicine or is being sent away somewhere for its health — in other words, a "puny" child—this is the child who should be very carefully examined for diseased or obstructive condition of the pharyngeal and faucial tonsils. The little fellow is a mouth-breather, has a running nose nine months out of the year, talks only when necessary and articulates indistinctly. If in school, he is rated as inattentive and dull and the visiting nurse is more than apt to request his parents to have his adenoids removed. But the removal of the pharyngeal tonsil does not suffice to set his feet firmly on the road to health; and in the absence of a definite luetic taint, the faucial tonsils are almost invariably involved and should be removed. It is not a difficult matter to examine a child's throat satisfactorily once his confidence is gained, either by reflected light or digitally, and the extent of obstruction or disease is easily ascertained. In childhood, tonsillectomy causes much less shock and discomfort than in adult life, and when indicated, the permanent benefits derived far exceed any risk which may attend the operation from possible hemorrhage, infection or accidents incident to narcosis. If any surgical procedure is ever justifiable during childhood, it is the complete removal of faucial and pharyngeal tonsils which are diseased or sufficiently enlarged to cause obstruction to the respiratory or alimentary tracts.

CONTRAINDICATIONS

1. Innocent Tonsils.—Often we find the deluded parent, who, like the foolish mother wilfully exposing her children to measles or mumps because "they have got to have it some time," wants the whole family cleared of tonsils so that "the other children will not suffer like poor little Jimmie has with his throat." Even 'though we know that a successful tonsillectomy is followed by no annoying loss of function in other tissues, that development is not impaired, and even if we assume that the tonsil is a useless non-functionating and often trouble-making tissue, the tonsil operation is worthy of respect and is certainly not without its dangers. To remove tonsils which have not definitely offended is misdirected prophylaxis,

is a "slaughter of the innocents" and is not surgery.

2. Hemophilia.—Many careful operators ascertain the clotting time of blood as a matter of routine and decline to operate if the clot fails to form within a time arbitrarily fixed by themselves, but usually about five minutes. The wisdom of this measure can not be questioned, but even more important is an inquiry into the personal and family history as to the occurrence of prolonged hemorrhage from any cause. Often a patient will claim to be a "bleeder" for some reason which has suffered inflation or distortion through an aversion to the sight of blood and such statements can not be relied upon unless laboratory findings are confirmatory. Where true hemophilia exists, the tonsil operation should never be considered, but where there is slow clotting due to a deficiency of blood clotting elements which may in time be supplied through the administration of medicines or the local application or tonsillar injection of certain reliable preparations now on the market, the operation may be done with a reasonable degree of safety in selected cases.

3. Epidemics.—This applies more especially to the diseases, occurring in epidemic form, which gain entrance to the system through the respiratory tract. It is certainly poor judgment to create an open wound in the throat during an epidemic of influenza, measles, scarlet fever, diphtheria, mumps, etc., when by so doing we indirectly weaken the patient's vital resistance and directly prepare a soil, fertile and inviting, for the growth of pathogenic bacteria. Few, if any, tonsil operations may be considered emergencies and the possibility of instituting prophylaxis by removing tonsils after an epidemic is under way is remote and does not justify the dangers involved during operation and convalescence. During the recent epidemic of influenza, a great majority of surgeons refused to operate upon either the nose or throat for any condition and this is evidence enough of their belief that the infection probably enters through the upper respiratory passages and, naturally, through the weakest point in the mucosa lining the nose or throat.

4. Anemia.—Whether primary or secondary, anemia of a moderate or grave degree must be overcome to a marked extent before the tonsil operation can be considered reasonably safe. The actual loss of blood during operation is usually insignificant, but the shock incident to any operative procedure and the existing impoverished condition of the tissues contribute to prolonged glandular involvement and a slow healing process fraught with danger of infection because of lowered vital resistance and the exposed position of the wound. The hemoglobin content of the blood is not so vital a factor as the cell count and in doubtful cases a white, red and differential count should be made and the findings considered with a mind not unduly prejudiced by the clinical aspect of the individual case under consideration. Infected tonsils may cause or contribute to anemic conditions and their removal be indicated. However, there is a proper time for all things, and the time for tonsillectomy is not when the patient is temporarily "down and out."

5. Acute Purulent Processes of the Mouth, Throat, Nares, and Accessory Sinuses.—The presence of pus which may drain into the tonsillar space either by gravity, continuity of tissue or infiltrate through submucous channels, is particularly dangerous after tonsillectomy in that secondary infection is apt to occur. An active pyorrhea alveolaris, alveolar abscess, ulcerated conditions of the gingeval, buccal or sublingual mucosa, ulceration or infection of the uvula or faucial pillars, peritonsillar abscess (acute), pharyngeal or retro-pharyngeal infection should receive attention and be eliminated before the tonsil operation can be considered safe. Equally important is the presence of pus in the nares, nasopharynx or accessory sinuses, for here the drainage takes place directly over the tonsils and virulent pus is fed continually to an area which if lacerated or abraided, forms an ideal site for the establishment of a secondary process. If the pus is confined, it must be remembered that "pus must out" and, aside from the acute inflammatory and febrile conditions co-existing which, in itself, would contraindicate an operation, must eventually be dealt with. That the tonsils may be the source of infection in many cases, is a conceded point, but once the infection is definitely located in an adjacent tissue, this focus must be dissipated before the tonsils are removed, as the extensive

wounds created by tonsillectomy invite renewed infection.

6. Acute Pulmonary Tuberculosis. — Even 'though we are sure that the tonsils are tuberculous because proven so by the microscopic examination of smears obtained directly from the crypts or from any diagnostic method which we may accept as standard, the removal of tonsils during the acute stage of pulmonary tuberculosis is not justified, with the possible exception of greatly hypertrophied tonsils which practically occlude the upper air passages. There is no possibility of arresting the process by a tonsillectomy, and, because of post-operative reaction, regardless of whether a local or general anesthetic has been employed, there is a great probability of exciting a fulminating process which always accentuates the pulmonary condition and may prove fatal.

7. Acute Febrile Diseases.—Under this head may be included not only the acute infectious diseases but also acute nephritis, acute cystitis, acute rhinitis, acute pharyngitis, acute bronchitis, acute tonsillitis and many other conditions in which there is a distinct rise in temperature. Tonsils may be diseased and operation indicated coincident with the advent of any of these troubles, but the acute condition must subside and fever abate before the operation may be done with a reasonable degree of safety. Temperature above 100° from any cause whatsoever is considered sufficient grounds for postponing operation.

8. Acute Surgical Conditions.—It is not uncommon to have a patient request tonsillectomy at the same time an appendectomy, etc., is done—this because of convenience as a time-saver and a desire to eliminate all troubles during one trip to the hospital. Minor surgery, such as a circumcision, incision of an abscess, excision of a small tumor superficially located, or the extraction of teeth, is permissible, but to add to the post-operative shock and contribute directly to the discomfort of the patient after a major operation, is never advisable and, especially where a laparotomy is to be performed, a request for the removal of tonsils should be met with a flat refusal.

9. Infancy and Old Age.—Infants are especially susceptible to acute pulmonary and middle ear conditions arising from tonsillitis; and often it seems imperative to remove the tonsils. This may be advisable in an occasional case, but it is far better to wait until the baby is three or four years of age if we can do so without directly jeopardizing the life of the little patient. Local applications to the tonsils are usually very effective and should be resorted to in every case until proven inefficient.

Although the percentage is relatively small, old age is not without its tonsillar troubles, and the question of operation occasionally arises. No hard and fast age limit can be fixed—each individual must be considered from the angles created by his particular case and a decision based upon common sense rather than so-called scientific reasoning. It is wise to assume a non-operative attitutde toward the aged, but not with a mind closed to reason. A patient of advanced years may suffer from arthritis, endocarditis, etc., due to focal infection of the tonsils and operative interference may then be the only way to remove the cause. In such an instance, the surgeon would fall far short of his duty should he refuse to operate. Both in infancy and old age, tonsillectomy should be looked upon as a measure to be resorted to only after less radical means have failed and conscientious investigation convinces us that we are fully justified in subjecting the patient to the many dangers incident to any interference with nature during the critical years at the extremes of life.

10. Syphilis.—Too much can not be said about the prevalence of syphilitic infection and the pharyngeal and laryngeal manifestations encountered daily, especially in our free clinics. The tonsil may be the site of the initial infection and a well-developed chancre found involving the tonsillar or peritonsillar tissues, and, unfortunately, those who show the primary lesion at this point, can hardly be classed always among the innocents. Whenever there is any reason to suspect specific infection either from the history given by the patient, the actual occurrence of a tonsillar chancre, the unmistakble mucous patches, or, in the tertiary stage, the characteristic scarring of the soft palate, faucial pillars or the eaten-out appearance of the posterior nares and nasal sep-

tum with hard, dry, greenish, foul-smelling crusts and secretions which create or similate ozena, a Wassermann should be done before removal of the tonsils is considered. Nor does the active institution of standard treatment nor the disappearance of visible manifestations permit of the performance of tonsillectomy with an assurance of safety. Wassermanns should be done repeatedly and at regular intervals during the treatment, and when successive negative results are obtained, then we may go ahead with our operation if there is still reason for the removal of the tonsils. Often the administration of arsphenamine and the mercurials will clear up tonsillar conditions when due to specific infection, which at first sight seemed to demand surgical intervention, and in advising the operation to syphilitics as a matter of eventual necessity, it is well to bear in mind that the efficient present-day treatment is nothing short of wonderful and apparently normal should be removed as that the tonsils may clear up completely as part of the luetic involvement. Syphilis directly contraindicates the removal of tonsils as long as the luetic taint is present, but tonsillar conditions which may seem to demand surgical attention coincident with a specific infection, make the immediate and systematic treatment of syphilis all the more imperative.

An after-thought occurs concerning the value of tonsillectomy where the blood pressure is high. The preliminary catharsis, rest in bed, loss of more or less blood during operation, post-operative reaction, and meager diet, all contribute to a somewhat lowered blood pressure. However, the permanent improvement in this respect which is the rule rather than the exception after a tonsillectomy, is worthy of thought and favorable consideration. This does not mean that tonsils which are a "sure cure" for high blood pressure, for no such result will be obtained. Diseased tonsils, especially those harboring foci of infection, may cause or contribute to an increase in blood pressure, but the removal of tonsils to correct this condition should be undertaken only after every method of differential diagnosis has eliminated other possible causative factors and when there is evidence that the tonsils are actively pathologic. A very limited experience in observing the beneficial influence of tonsillectomy where the blood pressure is high, makes the above expression of opinion of value only in that it may further stimulate thought along this line and prove a matter of interest to those who may care to work it out to their own satisfaction.

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CONSERVATION OF VISION*

By W. S. Sims, M.D.,
Jackson, Miss.

A study of the census reports shows that there are in the United States about one hundred thousand blind people. A large majority of these unfortunate persons are blind as the result of preventable causes, or causes which need not have brought about loss of sight if proper precautions had been taken to avoid the causes themselves, or if the persons effected had sought relief at the proper time. A great deal, however, has been done to instruct people regarding the dangers of certain conditions, and this is the only way in which the matter can be remedied. One of the most fruitful fields for this endeavor is found in the school room.

No child should be allowed to enter school until the eyes have been examined by a competent person and steps taken to correct as far as possible defects of vision, if found, which not only hamper the school progress of the child, but may be a fruitful source of headaches and a considerable group of nervous symptoms. The educational process covers the years of physiological growth and development, and therefore should be so directed that normal physical development shall not be disturbed. In a word, the education or development of the mind must not be carried on at the expense of the general health or well-being of the body.

To this end, properly situated, planned and constructed school buildings are essential. In selecting a site for a school building two things are important: first, it should be erected on a soil that can be kept dry by suitable drainage; and sec-

*Read before the Mississippi State Medical Association, Fifty second Annual Meeting, Hattiesburg, May 13, 1919.

ond, it should be in a relatively open space so that the sunshine, light and air will not be shut out. The plan of the school building is of great importance and should be based upon the essential requirements of the school room.

The problem of appropriate lighting of the room must be solved. The light must be sufficient so that even on cloudy days fine print can be read with ease by the normal eye in every part of the room. To secure this, sufficient window space must be provided. On very bright days the light can be modified by suitably arranged shades.

Next, the room itself should be so placed in the building that the seats may be arranged in such a manner that the light from the windows will fall upon the desks and seats from the left of the pupils, and so that the wall space free from windows will be in front of the pupils. On this wall space the blackboards and maps used for purposes of instruction should be placed.

In a school room arranged and lighted in this manner the children are not forced to face the source of light while engaged in their work. Not only is sufficient and suitable lighting of great importance in the conservation of vision, but also the arrangement of seats and desks. Not only must those be so placed that the light shall fall upon the desk from the left side of the pupil, but the desk and seat must maintain a definite relation to each other and to the size of the child. With such seat and desk the child will find it easier to sit upright at his work and avoid faulty positions. Under no circumstances should the pupil be allowed to lean forward, as such a position is one great source of congestion and discomfort to the eyes, due to the filling up of the veins of the head as a result of wrong postures.

We must also take into consideration the color of the walls and shades. These should be of a neutral tint. Light gray or straw color is suitable for the purpose.

The utmost care must be observed to prevent the spread of contagion. This can be done in part by thorough cleanliness.

There are other sources of eye affections that are more serious and may lead to blindness that can and should be prevented if proper precautions are observed.

ACCIDENTS

Under this head there are many lamentable occurrences that result in blindness that are preventable.

The most common accident that we meet with is the lodging of a cinder or foreign body in the eye. The danger arises from the possibility of infection resulting in an ulcer which may cause the loss of the eye. Hence the need of prompt and proper removal and appropriate treatment.

Toy pistols and golf balls are responsible for a small percentage of blinded eyes that could be averted by preventative measures. Fire-crackers and toy cannons also claim a share of these unfortunate victims.

The above are only a few of the minor preventable accidents that may happen to the eye, but all call for prompt and appropriate treatment. The more serious accidents of the eye are burns, either from heat or from chemicals. In the case of burns resulting from chemicals, an alkaline solution such as soda is the proper thing to neutralize an acid, and an acid such as vinegar to neutralize an alkali. While the remedy is being prepared no time should be lost in washing the eye freely with water to remove everything of a foreign nature.

Accidents from heat, as in the careless use of curling irons, are not at all uncommon and are often serious injuries, especially in their remote effects. In accidents of this class the eye should not be washed nor handled in any way, but should be closed and bound up with a bandage until a physician can be consulted. Injuries of this kind require prompt attention at the hands of an expert, as they are often more serious than they appear to a casual observer.

The most serious accident of all is when a foreign body enters the ball. Injuries of this class often result in the loss of the eye and sometimes endanger the other eye from sympathetic inflammation.

Under this head are included all penetrating wounds of the eye. If a particle of steel or iron enters the eye, it may be removed by use of a magnet, but with lead, glass, wood or copper this plan is not possible; and we are forced to remove the object, or make the effort to do so, with instruments such as forceps. These

injuries are always serious and require the services of a physician who has given special attention to the eye.

Tobacco, alcohol and certain drugs must be classed as causing preventable blindness. It is well known to every physician that most poisons select certain parts of the body and exert their harmful effects chiefly or wholly upon them, while other parts of the body are little or not at all affected. One drug, for example, will disturb the action of the heart, while the breathing is not disturbed. So one poison will attack the eye without any disturbing influence upon any other part of the body.

Another peculiar thing about poisons is that they affect some persons much more than others. A dose of a certain poison that will kill one person will leave another unharmed. So the eye of one individual will be permanently damaged by an amount of poison that is not felt by another.

One of the most striking and characteristic forms of blindness caused by poisoning is that due to the use of tobacco. This form of poisoning is one that occurs only after long, habitual exposure to the influence of the poison.

The first thing noticed by a sufferer from the use of tobacco is the appearance of a cloud before the eyes just in the direction in which he is trying to look. The cloud sometimes seems very light, and sometimes so dense that nothing can be seen through it. From the very beginning, the recognition of colors is interfered with in a manner extremely dangerous to those who have to recognize color signals. The person affected sees the light, but seeing no color in it, he will think it is a white light dulled by smoke or fog, and the condition is all the more dangerous because he knows that he has always been able to recognize colors.

If the eyes are neglected and the cause of trouble not removed, tobacco amblyopia becomes gradually worse. The patient reaches a point where he can no longer read large print and will then conclude that he needs a change of glasses. It is then discovered that the true cause of the trouble is tobacco amblyopia. For prevention of blindness it is necessary to give up the use of tobacco completely, and at once.

ALCOHOL

It is usually meant when the word alcohol is used that grain or ethyl alcohol is the one referred to. Alcohol amblyopia very closely resembles that caused by tobacco. The loss of sight begins with a cloud obscuring the object viewed, and vision for colors is lost early.

Methyl alcohol, the so-called wood alcohol, acts very differently from ordinary grain alcohol. Alcohol blindness is usually caused by it after a single debauch. We occasionally see a case of partial blindness caused by the drinking of Jamaica ginger or some other mixture containing wood alcohol. Prevention must come through education as to the extremely dangerous character of the poison and legal measures requiring it to be labeled for what it is and the danger of poisoning by it to be indicated.

There are a number of medicines, such as quinin, that may injure the sight and even cause blindness, but when this occurs it is usually the result of excessive doses of the drug.

OPHTHALMIA NEONATORUM

During the past years the agitation regarding ophthalmia neonatorum has been so widespread that we are beginning to realize our deficiencies in adopting proper measures to prevent this disease of the eye, most disastrous if not properly cared for at the right time.

The time to start with preventative measures is with the young man who is going to be married. No man, then, who has suffered from gonorrhea has a moral right—and he should have no legal right—to marry until he knows as the result of an expert examination that he is no longer the bearer of an infection which can produce such terrible results. But if this precaution is not observed and there is any likelihood of an infection being present, the mother should be examined by a competent physician, and if the examination shows that an infection is there, then she should be thoroughly treated until it has disappeared. If the mother has not been under the observation of a physician, and she is even suspected of being infected at the time of the birth of the child, it is imperative on the part of the

physician to take every precaution.

First of all, the child is placed on its side and the lower eye is exposed by retracting the lids. The conjunctival sac is then washed out with a saturated solution of boric acid and two drops of 1 % solution of silver nitrate is dropped into the eye. This proceeding is repeated on the opposite side, first turning the child on that side.

It is of great importance that the solution be left in the eyes and not washed out at once. The drug is put into the eyes for the purpose of destroying the organisms present, and it can not accomplish this object instantaneously.

It is foolish to put these silver drops, that are not without a minimum of danger, into the eyes of all babies, especially the 2 % solution.

Referring to the danger of silver drops, I do not think I can do better than to quote from Dr. de Schweinitz, of Philadelphia, in *The Journal of the American Medical Association* of February 5, 1916, when he says:

"I have seen so many severe silver catarrhs in my life, and I have certainly seen at least half a dozen eyes badly injured by the reckless or improper use of silver nitrate, that I am inclined to agree with some of the contentions that are prevalent in England, particularly those of Mr. N. Bishop Harmon."

In other words, there is no dispute as to the efficiency of the Crede method, if not used stronger than a 1 % solution, in institution work, and in the hands of those who are competent to use it. In general terms, the measures advised by physicians for the elimination of this preventable cause of blindness should be left to the physician in charge, who is in a position to know what to do and what not to do.

Mr. Henry J. Wilson, Secretary of Gardner's Trust for the Blind, says in the *London Chronicle* that birth blindness can be and is being gradually decreased, and one of the most important agents in this beneficent result he considers to be the making of ophthalmia neonatorum a compulsory notifiable disease. It is imperative that every case should be brought to the notice of the department of public health. But compulsory laws directing physicians to use a certain drug of a certain strength in the eyes of every babe born into the world is a reflection upon the efficiency and honesty of our physicians. Leave physicians alone and free to consult their experience and authorities as to what drugs and how they shall be used in the treatment of disease and not legislative bodies.

Happily, reports from nearly every part of the world inform us that the amount of blindness is gradually decreasing; and one of the most important agents in this beneficent work is the physician, who best knows the source of infection and how to prevent even its appearance in most cases. In prevention lies the greatest service that the medical profession can render to the race. This applies to the eye, as well as in other branches of medicine.

AUTHORS' ABSTRACTS

Eye, Ear, Nose and Throat

A Study of Acute Mastoiditis at Fort Riley, Kan. J. R. Scott, G. W. Swift, J. J. Hompes, G. H. Allen and E. L. Posey, Fort Riley, Kan. The Journal of the American Medical Association, Vol. 72, No. 16, April 19, 1919, p. 1122.

Mastoiditis contributes greatly to the ineffective list in the Army because of the number of cases and the long convalescence and weakness which follows.

The disease is a real menace. The intensive training, the housing of such large numbers together and the epidemics of measles, scarlet fever and tonsillitis render the recruit peculiarly susceptible to streptococcus infection. "Locality infections" due to the predominance of some variety of streptococcus, or the pneumococcus, may occur in localities, the tonsils furnishing the most constant nidus for this organism.

The roentgen ray is a most important aid in diagnosis and prognosis, but requires careful technic. Both mastoids should be shown for comparison on the same plate, one person making all exposures of a single case.

Mastoids are of three types. A rudimentary type with practically no mastoid cells—a type with cells secluded entirely below the antrum—the third type being large, with cells extending into the zygoma, far back and into the tip. Type one never requires operation, as the antrum will drain through a properly incised drum. The other types must be watched and operated upon if necrosis becomes apparent, as evidenced by the confluence of the individual cells as revealed by the roentgenograms.

Mastoiditis following influenza often recovers, while following measles nearly always requires operation. Necrosis first appears in the chain of cells extending downward from antrum to tip. At this point the sinus changes its course and the cell walls are delicate. Pain and tenderness can not be relied upon. The absence of tenderness is due to a thick cortex. The infec-

tion is often through the blood stream and necrosis may be present without symptoms other than that of a discharging ear. Headache is an important symptom, suggesting meningeal irritation, and should never be disregarded.

Vestibular Reactions in Five Hundred and Forty-one Aviators. Louis Levy, Memphis, Tenn. Journal American Medical Association, Vol. 72, No. 10, March 8, 1919, p. 716.

Doubts have been cast as to the value of vestibular tests in aviators owing to certain statements being made that repeated stimulants such as experimental whirling or flying lessened the reactions. If this were so there would be no means of judging the normal vestibular apparatus, because the loss of the reactions is significant of some impairment of the vestibular apparatus. The author of this paper includes a chart of the nystagmus reactions in the examination of 541 aviators, these tests being carried out at Barron, Caruthers and Taliaferro fields. The flying of the men examined varied from that of cadets just starting to officers who had flown 1,000 hours. The average nystagmus of accepted applicants from data given by 67 physical examining units showed on turning to the right 23 seconds and on turning to the left 23.1 seconds. The average nystagmus of the 541 cases on turning to the right was 24.6 seconds and on turning to the left 24.4 seconds, showing a slightly higher average in the flying men. In summarizing, the author finds nystagmus is not diminished by repeated turning, although pass-pointing and falling, which are objective signs of vertigo, were slightly diminished in flyers of 100 hours or more experience, due to the fact no doubt that the flyer has learned to interpret his vertigo and for this reason rapidly recovers his poise.

Hyperplastic Exudative Retinitis (Non-Hemorrhagic). J. W. Jervey, Greenville, S. C. American Journal of Ophthalmology, Vol. 2, No. 2, February, 1919, p. 127.

Jervey observes that true hyperplastic, exudative, non-hemorrhagic phenomena in and apparently adjacent to the retina, are rare. The appearances which they present to ophthalmoscopic examination are frequently similar to, and perhaps often indistinguishable from, the lesions resulting from previous hemorrhagic extravasations. In fact, the ultimate result, subjectively and objectively, of organized hemorrhagic and non-hemorrhagic exudates, might conceivably be pathologically identical, as in the lesions of retinitis proliferans, which may have their origin in either form of exudation.

After giving in detail the history of four cases observed by him, the writer draws the following conclusions:

There is a retinal pathologic entity consisting of organized hyperplastic tissue evolving from fibrinous or plastic exudates of indeterminate origin.

These exudates are not of hemorrhagic character, though it would appear that they must necessarily have a vascular pathogenesis; and the tissue into which they are determined would seem to be analogous to granulation or chronic inflammatory tissue.

The clinical phenomena manifested can evidently be divorced from syphilitic, tuberculous or traumatic causation, though unquestionably resembling the lesions sometimes seen consequent upon these origins.

The hyperplastic organizations are characterized by a white or grayish or yellowish or mottled appearance, in form suggesting a piece of popcorn or miniature cumulus clouds, showing a fine vascularity at some period of their development; of no fixed size; usually it would seem, in one mass, often highly elevated from the retinal level; when in the active formative stage usually with well marked peripheral definitions; with a minimum of pigmentation or none at all; and in the writer's observation at least, with points of selection for their development either in the papillary or macular area. If in the disc area the organized exudates probably always extend along the nerve trunk beneath the sheath. They are, of course, essentially benign.

As the pathologic morphology and clinical appearances of these lesions are evidently similar (though usually distinguished by location, arrangement, anamnesis and instruments and methods of precision) to those of retinitis circinata, retinitis proliferans of non-hemorrhagic origin, and certain forms of syphilitic, traumatic and perhaps tuberculous retinitis, it would seem appropriate for clinical study and for the minimizing of a certain obscurity to group all of these for differentiation from other types under the descriptive head of hyperplastic exudative retinitis-non-hemorrhagic.

Diagnostic Value of Eye Ground Appearances in Nephritics. J. A. Kearney, New York, N. Y. New York Medical Journal, Vol. 108, No. 19, p. 803.

The ophthalmoscopic picture of the fundi of eyes of nephritics, when changes are present, represents the results of alterations in the walls of the retinal blood vessels or of toxins circulating in blood stream.

Retinitis albuminurica associated with chronic nephritis presents the following characteristic eye ground appearance: Cloudiness of fundus details; lustrous white patches around the papilla; hemorrhagic spots in same zone; stellate arrangement of white spots in the macular region; veins distended, arteries unaltered in size. These fundus changes are generally due to vascular sclerosis and prognosis as to life is usually bad, the patient dying within two years of the onset of the ocular symptoms. The only subjective symptom is blurred vision, which occurs late in the disease, and both eyes are always affected. The ophthalmologist is frequently first to discover by ophthalmoscopic examination fundus signs of Bright's disease, the patient up to then being unaware of any serious organic malady.

The recorded proportion of retinitis in renal disease varies from 9 to 33%; occurs usually

between the ages of thirty and sixty, and twice as often in men as in women.

Albuminuric retinitis occurs rarely in acute nephritis associated with specific fevers and sometimes is associated with albuminuria of pregnancy. In these instances changes are largely due to toxic circulating elements rather than to vascular sclerosis and the prognosis is not so serious. A widespread neuroretinitis with exudations and hemorrhages characterizes albuminuric retinitis of pregnancy. It occurs usually in primipara and the second half of gestation. When retinitis is observed prognosis as to life and vision depends upon the duration of gestation. Induction of premature labor is recommended at times, in the first six months of pregnancy, as a therapeutic measure if sight is to be saved. In a few eclamptic cases are there signs of retinitis. The nature and extent of changes observed in the fundi of albuminuric retinitis are no indication of the condition of the diseased kidneys.

Kinking and increased tortuosity of the smaller vessels of the retina are the earliest observable signs of arteriosclerosis anywhere in the body, and they are the first fundus changes to be noted in chronic nephritis. They forecast the degenerative process. Cloudiness of the disc details and margins, without arterial changes, usually forecasts toxemic retinitis, which is generally of the inflammatory type.

On account of the highly organized and easily destructible protoplasm composing retinal elements, they react readily to toxic substances in the circulating blood and degenerate as readily when nourishment is withdrawn as in arteriosclerosis. Hence the importance of an ophthalmoscopic examination of the eye grounds in all general diseases in which toxemias or degenerations are a factor, and more particularly when it is possible to view the fundi in the early stages.

Proper Diagnosis as a Guide to Prognosis and Operative Treatment of Impaired Hearing. Robert Sonnenschein, Chicago, Ill. Illinois Medical Journal, Vol. 34, No. 6, December, 1918, p. 324.

Diseases of the middle and inner ear vary in their amenability to treatment, general or local. Chronic middle ear catarrh may improve with air inflations, massage, or correction of nasal obstructions. In otosclerosis or stapedial fixation, these measures effect no good, and often actually hasten the impairment of hearing. Disease of the auditory nerve or of the inner ear is often toxic in origin, and may be ameliorated by inhibition of alcohol, tobacco, quinin, salicylates, etc. If due to lues, diabetes, arteriosclerosis or nephritis, treatment of these conditions may help; but nasal operations will of course be futile.

Since the proper treatment depends upon the nature of the lesion, an accurate diagnosis is the first essential. This can not usually be made by mere inspection, but requires testing with the voice, the Galton whistle, and especially tuning forks. The hearing for high and low tones, determination of relation of bone to air conduction, the lateralization of sound, and the duration of bone conduction as compared with the normal individual, are important factors.

If middle ear involvement is present, due to, or made worse by, nasal obstruction, correction of septal deflections or hypertrophied turbinates is indicated. In all intra-nasal operations, and especially those on the inferior turbinates, great care must be exercised to conserve as much mucosa as possible in order to avoid loss of columnar ciliated epithelium, its replacement by squamous cells, and the possible production of an atrophic rhinitis with crusting, foul odor, etc.

Tumor Involvement of the Maxillary Antrum. L. D. Brose, Evansville, Ind. Mississippi Valley Medical Journal, Vol. 26, No. 2, February, 1919, p. 50.

Antral tumors occur as primary and secondary growths and may be benign or malignant in character. There are two varieties of cystic tumors: retention mucous membrane cyst and dentigerous cyst. The former lined by a single layer of ciliated epithelium when caused through obstruction of mucous membrane glandular orifice, or by cuboidal epithelium when originating through distension of glandular areolar tissue suaces. Lymphatic vessel obstruction may produce a retention cyst with endothelial lining. Antral polypi are less frequently found than in the nasal passage. Of the sarcoma, the round cell variety is most malignant. The carcinoma shows greater malignacy than other tumors.

Recurrent epistaxis, nasal discharge, obstructed breathing, neuralgia in the teeth and face, bulging of antral wall, spontaneous loss of teeth and cervical glandular enlargement are symptoms met with. A parchment-like crackling sensation upon palpation points to dentigerous cyst. Benign growths produce few symptoms outside of bulging and pressure neuralgia. Malignant tumors are rapid in growth and of more or less solid consistency.

Exploratory puncture differentiates between cyst and empyema. Transillumination is not so useful as the radiogram. Operative measures: partial and complete resection of the superior maxilla, beginning with incision at the wisdom tooth, extending along the facial wall through the mucous membrane and periosteum, severing the frenulum labii superioris.

Control bleeding by tampons carrying adrenalin, and remove hemorrhage with a suction apparatus. Radium and fulguration are not so beneficial as elsewhere in the body.

Deformities of the Nose Resulting from Syphilis: How Shall We Treat Them? William Wesley Carter, New York, N. Y. Medical Record, Vol. 95, No. 8, February 22, 1919, p. 318.

Syphilitic deformities of the nose are characteristic and constitute a distinct class, the prognosis and treatment of which differ so widely from those of all other deformities that their separate consideration is necessary whether from

a clinical, pathological or surgical point of view.

The results secured by the older methods have been so unsatisfactory that interest in these unfortunates has waned and they have to a large extent been neglected.

In syphilitic cases the chief points to be considered are: the pathology of the disease; the grave metabolic and nutritional disturbances; the amount of scar tissue present; the fact that bone and cartilage are the tissues chiefly involved; and the poor state of health in which these patients are usually found. Because of these circumstances and the fact that in the tertiary stage of this disease the bones are especially vulnerable, bone transplantation is distinctly contra-indicated, while the making of flaps and shifting of the tissues can not be safely done before the disease is under control.

Dr. Carter prefers to have the patient under observation for at least two months before the operation, during which time the medicinal, dietary and hygienic conditions are looked after. In the meantime, the environment, from an artistic point of view, the local conditions and the deformity itself are studied and the plan of procedure carefully mapped out.

Where he has been able properly to conduct the preliminary preparation of the patient, he has secured excellent results by combining with bone transplantation the use of flaps and the subcutaneous shifting of the tissues.

Where there has been complete destruction of the nose, he first transplants the bone into the arm or the forehead, using the flap containing the bone for the reconstruction of the nose.

Dr. Carter regards the above procedures as the only methods to which these unfortunates may reasonably look for relief.

Fourteen Points Concerning Ophthalmia Neonatorum. Frank Allport, Chicago, Ill. Illinois Medical Journal, Vol. 35, No. 2, February, 1919, p. 64.

1. Ophthalmia neonatorum is responsible for about 20 % of the blind in the United States and for about 25 % of the inmates of blind asylums.

2. It costs about $30.00 a year to educate an ordinary child and about $400 a year to educate and care for a blind child.

3. There are about fifty blind schools in the United States, costing about $2,000,000 a year to maintain.

4. Ophthalmia neonatorum costs the United States about $7,000,000 per annum in actual money.

5. Next to optic nerve atrophy, ophthalmia neonatorum is the most prolific cause of blindness in the United States.

6. The Crede treatment for all new-born children would almost entirely eliminate ophthalmia neonatorum and its dreadful consequences from the world.

7. The use of this evidently necessary treatment is by no means universal and its omission is not confined to midwives. In order to accomplish its purpose, the use of this treatment should be invariable.

8. Midwives are a financial and sociological necessity. Fully one-half the confinements are attended by midwives. Midwives should be educated, examined, licensed and inspected, and should always call in medical assistance in complicated cases.

9. Births should be compulsorily reported within a few hours. The ocular condition should be reported, and the physician should state whether or not he has used the prophylactic treatment.

10. Suitable laws should be passed in each state providing for the invariable use of Crede prophylaxis in all newly-born children, and proper penalties should be imposed for the non-observance of such instruction.

11. While not prophesying as to what the future may produce in the way of prophylaxis, it is reasonably certain that at present there is no remedy that can take the place of nitrate of silver.

12. One almost insurmountable difficulty in the way of the proper treatment of ophthalmia neonatorum is the paucity of resources in combating the disease. A small hospital should be established in all large cities for the prompt reception of such cases.

13. Health departments in the larger cities should employ an experienced eye nurse to search out and follow up cases of ophthalmia neonatorum and to see that immediate action is taken when cases are found.

14. The author believes that great benefit can be accomplished by the free and frequent distribution of brief and pointed pamphlets, printed in several languages, by some central organization, such as the National Committee for the Prevention of Blindness.

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EDITORIAL DEPARTMENT

GENERAL GORGAS TO ERADICATE YELLOW FEVER FROM THE WORLD

It has been known to the friends of Major-General W. C. Gorgas that since his wonderful work in the sanitation of Cuba and Panama, his great ambition has been to complete the work of eradicating yellow fever from the world. He had driven the dreaded "yellow jack" from its strongholds in the islands in the Caribbean Sea and from the ports of Central America, where it had been a menace to the Gulf and Atlantic cities of the United States for centuries; and he was ready to carry the fight against this destroyer of life and commerce into the ports of South America, when he was called to South Africa to advise measures for the prevention of pneumonia in the Rand and malaria in Rhodesia. While in South Africa he was called for to come to Washington to take up the duties of Surgeon-General of the U. S. Army, and he was again prevented from realizing his cherished dream.

In 1916, General Gorgas had obtained a year's leave of absence from his duties as Surgeon-General, and he was on a steamer bound for South Africa when he was called back to Washington because of the mobilization of troops on the Mexican border. Then war with Germany was declared and he felt that his duty was to direct the work of organizing the Medical Department of the Army for the stupendous task of caring for the health and lives of the millions of Americans who were being mobilized for fighting our battles in Europe. Thus, General Gorgas' hope of being the first man to drive a communicable disease from the earth was again interfered with; but the picture of men and women dying of an infection that ought not to exist in a civilized world, remained in the heart of this great man and he never forgot the call to the tropics.

Last October General Gorgas was "sixty-four years young," which forced him by law to retire from active duty in the Army. He, therefore, determined to accept the offer of the Rockefeller Foundation to provide funds and means for the altruistic work of eradicating yellow fever from certain South American ports where it is still endemic; and he has since been making preparations for another expedition to the tropics. He has sailed for South America, accompanied by Brigadier-General Theodore Lyster and Lieutenant-Colonel W. D. Wrightson, who served with him in Panama. With him is Mrs. Gorgas, who has been his help-mate and his inspiration throughout the years of his great achievements.

General Gorgas stands out today as the most admired and the most beloved man in American medicine. In addition to having the gratitude of the American people for his great work as Surgeon-General during the first eighteen months of the war, he has earned the name of being the greatest sanitarian in the history of medicine; and in proving that the white man can live and accomplish as much work in the tropics as in colder climates, provided that malaria, yellow fever, hookworm and

other tropical diseases have been eliminated, he has become one of the great benefactors of mankind.

General Gorgas has received greater honors at the hands of his confreres than any other medical man who has ever lived in America; but no man ever wore his laurels with greater modesty. Now he is giving up the comforts and pleasures of life in Washington to work in tropical jungles, and he hopes to finish his career by actually stamping out of existence a disease that in the past has destroyed hundreds of thousands of lives and which has many times paralyzed the commerce of our Southern cities. When the infection of one disease has ceased to exist, it will encourage sanitarians in working to eradicate other communicable diseases. It will, therefore, mean much to the world for General Gorgas to be successful in his efforts.

The General carries with him to South America the affection and esteem not only of the entire medical profession but of millions of Americans who have been the beneficiaries of his labors. We believe that he will be successful in his mission, and we hope that he may soon return to the United States and live for many, many years more as the beloved Nestor of the medical profession in America.

STUDIES IN THE FEEDING OF INFANTS

It would be difficult to overestimate the value of the pediatrician to a community, for much of the progress of any community depends to a great extent upon the caliber of "young blood" within its boundaries. The infant and adolescent must be safeguarded in many particulars, chief of which might be mentioned the acute infectious diseases of childhood and nutritional and developmental disturbances. In the former instance—the acute exanthemata—the pediatrician's labors have been simplified by the introduction of vaccines and serums, but in the studies of the necessary vitamines to maintain heat and energy production and growth, the work is much more difficult and baffling.

Food stands alone in primary considerations of child life conservation. Unlike his confreres, the pediatrician must make a personal study of a given food or substitute in a special case before it can be recommended. He must determine the value of the food as a temporary or permanent substitute, always bearing in mind that there is danger of a scarcity of any one article.

From time to time in many sections of the country, there arise differences between health officials and dairymen, or some other influence may bring about the interruption of the normal and essential distribution of the very necessary milk supply to a dependent field; and to cope with this shortage, the child life must be continued by the use of some substitute even 'though artificial in character. The nearer Nature these substitutes approach, the more practical become their usefulness. There has been considerable agitation among research men in reference to the nutritional value of vegetable milk* in feeding children; and it is of interest to note the progress that is being made in this direction. No one questions the nutritive value of nuts, but it is a matter for debate when the method of ingestion of this article of food is considered. Emulsions—the extracts of nuts — are acceptable as a means of providing high food values and to insure easy digestion.

Experimentation with almond milk has been carried on with apparently very successful and encouraging results. The comparative chemical analysis of almond milk after trituration with water and cow's milk shows the following points: Fats,

* Chapin, H. D. "The Use of Vegetable Milk in Children." Archives of Pediatrics, Vol. 36, No. 1, January, 1919, p. 28.

54.9 to 4 in cows; protein, 21.0 to 3.3; carbohydrates, 17.3 to 5; ash, 2.0 to .7; and water, 4.8 to 87.0. In such an experiment the theoretical and practical issues must be studied. Clinical applications will prove the practical side of this new form of feeding while the more theoretical considerations may be summed up as follows: The almond milk (prepared in a specific manner) has much less tendency to ferment than cow's milk; it has a high fat ratio; its protein is less likely to undergo putrefaction than is the casein in cow's milk; its contents of phosphorous and sodium chlorid render it valuable in the treatment of rickets, while its low carbohydrate coefficient makes it of use in the various sugar fermentations.

Many are inclined to become wedded to a set routine, and instead of extending a cordial reception to the very material effort of colleagues, we receive them with prejudice and may it not be suggested, with a tinge of uncharitable feeling toward the motives prompting conscientious labors? Anything that promotes the resistive powers of the infant and youth and is tenable according to the best traditions of the profession, should be accorded sincere, wholesome and earnest investigations.

LESSONS FROM THE ARMY IN THE CONTROL OF VENEREAL DISEASES

War has its compensations, and among the good things that have come out of the United States' part in the war, is the education of the public regarding the prevalence of venereal diseases and methods for preventing them. It would have taken the laity many years to come to the viewpoint we now have regarding the prevention of venereal diseases had it not been for the fact that War Department officials saw that vice is an enormous hindrance in raising an American army physically able to be sent on the firing line.

The Secretary of War, Hon. Newton D. Baker, in the way in which he has handled the entire venereal situation in the Army, has shown a wonderful grasp of a public health problem that has been kept in the background from the beginning of time, in so far as the human race is concerned. It required courage of a high type to promulgate and carry into effect the orders sent out by the War Department; but, from the Secretary of War down to the non-commissioned officers in the Army, an honest effort has been made to administer the regulations regarding the control of venereal diseases.

The results which have been obtained from the practical and scientific methods of combating social diseases in the American Army have been wonderful. Congress and the state and municipal authorities have all aided in this important work, which has had for its object not merely the raising of a fighting army, but which also aimed at improving the human race. Congress has never appropriated $1,500,000.00 for a better cause than for preventing venereal diseases; and it was a wise move to place the extra-cantonment venereal prevention in the hands of the United States Public Health Service and the state and municipal health authorities, because it is one of the greatest public health problems with which we have to deal.

It will interest physicians to know of the efforts at controlling venereal diseases in the American Armies in France. The methods which have proved practical in military practice can, with modifications, apply to civil communities; and we can learn much from what has been worked out by Army medical officers.

The fact that the Army has proved that houses of prostitution are foci of venereal infections for soldiers makes it clear that

they are a greater menace to young men in civil life.

Bulletin No. 54, sent out for the information of our armies in France, will be of great interest to the medical profession, since it presents clearly the conclusions of the General Staff of the American Army in France. This bulletin, with editorial comments by the editor of *War Medicine*, is reproduced under the Department of Public Health in this number of THE SOUTHERN MEDICAL JOURNAL.

THE APPLICATION IN CIVIL PRACTICE OF THE ADVANCES MADE IN MEDICINE AND SURGERY DURING THE WAR

The response by the medical profession to the call of war was one of the splendid things brought out in the great crisis of our country's history that is passing. There were very few exceptions among the leading men in all branches of medicine and surgery, under fifty-five years of age, who were not declined because of physical disability, who did not give up their private work to serve in the Army or Navy. The great bacteriologists, pathologists, internists, neurologists, surgeons, urologists, and specialists in all lines, devoted their entire time for nearly two years toward preventing disease among soldiers, or in treating them when sick or wounded. While all of these great scientists were working primarily for the purpose of raising and maintaining an Army and Navy fit for fighting, they were making researches and investigations regarding the causes, prevention and treatment of diseases. As a result of the combined effort of the leading men in the medical profession who were engaged in war work, very great advances in medicine and surgery in all its branches have been made, and thousands of lives of sick and wounded soldiers have been saved by this altruistic work of the medical profession.

One of the great by-products of the war has been the improvements in many ways in the science and practice of medicine and surgery. There has also developed a literature which, while particularly applicable to war conditions, carries lessons to the medical profession in civil life, especially in industrial medicine and surgery. *War Medicine*, a monthly medical journal of from 150 to 250 pages, published by the American Red Cross in France, for the medical officers of the American Expeditionary Forces, was one of the mediums for transmitting medical information that was thought to be helpful to those who were caring for the sick and wounded soldiers. The Editor-in-Chief of the SOUTHERN MEDICAL JOURNAL was editor of *War Medicine* in France. He, therefore, reviewed the medical matter which was published in that strictly war periodical. Since *War Medicine* was not distributed to physicians in civil life, and because of the difficulties of transportation in France, many medical officers failed to receive copies, it may be of interest, and perhaps helpful, to our readers if some of the articles which were published in it are reproduced in the SOUTHERN MEDICAL JOURNAL. Permission has been granted by the American Red Cross to the SOUTHERN MEDICAL JOURNAL to publish anything that appeared in *War Medicine* which has any bearing upon medicine and surgery as applied to civil practice. Only those articles which sum up the experiences in war, and those which also may be helpful to the medical profession generally, will be used.

It is hoped that the publication in the JOURNAL of a series of articles on war medical literature that may be applied in the every-day practice will be a feature of interest not only to medical officers who are returning to their private work, but also to those who did not have the privilege of serving in the Army.

VOLUNTEER MEDICAL SERVICE CORPS

The Council of National Defense authorizes the following:

Characterizing the work of the Volunteer Medical Service Corps and the Medical Section of the Council of National Defense as "a very striking demonstration of the American spirit," Dr. Edward P. Davis, President of the Corps, paid tribute to the patriotism of American civilian doctors at the final meeting of the Central Governing Board of the Corps held in Washington March 14, prior to the termination of its wartime activities April 1.

A report submitted at the meeting showed that nearly 70,000 applications have been received from physicians for membership in the Corps, of which 56,540 had been received and coded prior to the signing of the armistice, November 11, 1918. Qualifications of these civilian doctors, classified and coded on cards, will be placed in the Library of the Surgeon-General of the Army, where they will be accessible to all Governmental departments for all time to come. With the approximately 40,000 medical officers additional, who are in the Army, Navy and Public Health Service, practically all the able-bodied, eligible doctors of the country will be listed, available for the Nation's needs. Usually there are said to be about 150,000 physicians in the United States, but this total includes a large proportion of superannuated, disabled or ineligible.

Dr. Franklin Martin, Chairman of the General Medical Board of the Council of National Defense, expressed his warm appreciation of the cooperation he has received from the medical profession of the country and his firm belief in the value of the records of the Volunteer Medical Service Corps.

Dr. Davis said, in part: "This Volunteer Medical Service Corps and the work of the Medical Section of the Council of National Defense has been a very striking demonstration of the American spirit in more ways than we have imagined. I have always thought of a remark made by the President when the whole thing was in full swing, just about the time the Nation had gotten its stride. He said that the men who were staying in this country were having the hardest time. That was true. You take the medical men who actually went into service. Of course, some of them did office work in Washington, but the men whom I know who have been in the camps here—whether they got to Europe or not—say they have had the time of their lives.

"One man, my assistant, said: 'I am just coming back from a year's freedom from responsibility, except for the immediate performance of my duties.' Another man, who is probably the best x-ray man in the Army, said his career in the Army has been the happiest time he has ever known, because he has worked scientifically without interruption. They had the privilege of being free to concentrate their minds on duty, and I think the remark made by Dr. Studdiford in New York the other night is to the point—that there has not been in the past year in the practice of medicine in the United States one single easy, pleasant, satisfactory thing. He said he hoped he would never have to live to go through another such year.

"When you consider the burden thrown upon the profession of this country by the shortage of resident membership, taking away assistants, nurses, laboratory men; the influenza epidemic, with the consequent increase in morbidity and mortality, and the strain upon the population which is now showing itself—it has been a most hectic war season. I don't think any profession has met a similar crisis in civilization so nobly as did the American profession, and no small part of the moral value and success of the profession was due to this Corps. The fact that we had a Corps where the men could record themselves who did not go to the front had an enormous moral value.

I personally desire to testify to the pleasure it has been for me to do what I have done. And I have sincerely appreciated the honor which has been given to me."

To about 13,000 doctors whose applications for membership in the Volunteer Medical Service Corps had been received before the armistice was signed but which had not been acted upon by their state committees, now dissolved, Dr. Davis is sending the following letter:

From: Volunteer Medical Service Corps,
Council of National Defense.

To: Applicants for Membership.

1. With the cessation of hostilities subsequent to the signing of the armistice, the Council of National Defense, under which the Volunteer Medical Service Corps was organized, asked that the activities of that Corps be terminated, and Surgeon-General Ireland, of the Army, requested that the valuable records of the Corps be given place in the Library of the Surgeon-General, where they will be maintained permanently for reference by the various Government bureaus.

2. Your application for membership in this Corps, we regret to say, was not acted upon by your state and county committees before those committees were automatically released and, therefore, we are unable to complete your membership by furnishing you with the visible evidences of your tender of service, viz, the insignia and certificate of the Corps. We wish you to know, however, that your patriotic offer of service to your Government has been received and your qualifications as outlined on the Volunteer Medical Service Corps application blank have been transferred to permanent code cards which are to be preserved as an important record of the war.

3. We also wish you to know that those of us who have had the responsibility of organizing and enrolling the medical profession of the country appreciate the value of your offer of service and thank you for it from the bottom of our hearts. This includes the Secretary of War, who presides over the Council of National Defense, which authorized the Volunteer Medical Service Corps; the Secretaries of the Navy, the

Interior, Agriculture, Commerce and Labor, the members of the Council, and the President of the United States, who appointed the Council of National Defense and who definitely approved the Volunteer Medical Serivce Corps in the following words: "I am very happy to give my approval to the plans which you have submitted, both because of the usefulness of the Volunteer Medical Service Corps and also because it gives me an opportunity to express to you, and through you to the medical profession, my deep appreciation of the splendid service which the whole profession has rendered to the Nation with great enthusiasm from the beginning of the present emergency."

4. Finally, may I express to you on behalf of the Central Governing Board of the Volunteer Medical Serivce Corps its personal thanks for your generous response to its request for an offer of your services at a time when it appeared they would be so urgently needed by the Nation?

EDWARD P. DAVIS, M.D.,
President,
Volunteer Medical Service Corps.

Book Reviews

Nursing Technic. By Mary C. Wheeler, R. N., Superintendent of Illinois Training School for Nurses, Chicago, Ill. 265 pages with 32 specially prepared illustrations under personal supervision of the author. Philadelphia and London: J. B. Lippincott Co., 1918. Cloth, $1.50.

Merely an outline and demonstrations. Profusely illustrated. Good thing for probationers. It will save the teachers much work in outlining various details.

Clinical Medicine for Nurses. By Paul H. Ringer, A.B., M.D., member of Staff of Asheville Mission Hospital, Asheville, N. C., and of Biltmore Hospital, Biltmore, N. C. 286 pages, illustrated. Philadelphia: F. A. Davis Co., 1918. Cloth, $2.00.

The title indicates the scope of this work. It takes up the more common diseases from the standpoint of the nurses rather than from the physician's viewpoint. All unnecessary bacteriology and pathology are omitted, as are also physical signs, of which the nurse is supposed to have no knowledge.

The material is well arranged, the allotment of space wisely apportioned, and the subjects simply yet fully detailed.

A Text Book of Pathology with a Final Section on Postmortem Examination and the Methods of Preserving and Examining Diseased Tissues. By Francis Delafield, M.D., LL.D., Sometime Professor of the Practice of Medicine, College of Physicians and Surgeons, Columbia University, New York, and T. Mitchell Prudden, M.D., LL.D., Emeritus Professor of Patrology, College of Physicians and Surgeons, Columbia University, New York. Eleventh edition revised by Francis Carter Wood, M.D., Director of the Pathological Department, St. Luke's Hospital, New York; Director of Cancer Research, Columbia University, New York. 1354 pages, with 17 full-page plates and 389 illustrations in the text, in black and colors. New York: William Wood & Co. 1918. Cloth. $7.50.

In this eleventh edition there are numerous changes many sections having been completely rewritten in order to include the advances in pathology since the previous edition appeared. The changes in the text are accompanied by a number of new and excellent illustrations. One of the new features of the former editions was the number of photographs taken from preserved museum specimens instead of cuts from more or less fresh tissue.

Compendium of Histo-Pathological Technic. By Erwin H. Adler, Formerly Technician, Pathological Laboratory, Presbyterian Hospital, New York. 82 pages. New York: Paul B. Hoeber, 1918. Cloth, $1.25.

This is a small pocket manual designed for beginners in pathological laboratory technique. It comprises six parts, namely: I. Fixation of Tissues, II. Paraffin Section, III. Frozen Sections, IV. Celloidin Sections, V. Appendices (1) Preserving Museum Specimens and (2) Solutions, and VI. Index. Everything is very simply explained.

Stedman's Medical Dictionary—A Practical Medical Dictionary of Words Used in Medicine with Their Derivation and Pronunciation, Including Dental, Veterinary, Chemical, Botanical, Electrical, Life Insurance and other Special Terms; Anatomical Tables of the Titles in General Use, and these Sanctioned by the Basle Anatomical Convention, Pharmaceutical Preparations Official in the U. S. and British Pharmacopeias and Contained in the National Formulary; Chemical and Therapeutic Information as to Mineral Springs of America and Europe, and Comprehensive Lists of Synonyms. By Thomas Lathrop Stedman, A.M., M.D., Editor of the "Twentieth Century Practice of Medicine," of the "Reference Hand Book of the Medical Sciences," and of the "Medical Record." Fifth, revised edition. 1112 pages, illustrated. New York: William Wood & Co., 1918. Leather binding and thumb indexed, $5.00.

In looking over this new edition, the reviewer has found nothing justifying criticism, but on the other hand has been gratified at the number of new words and terms included. It possesses all the valuable work of the previous edition plus much recent material.

Essentials of Surgery. A Text Book of Surgery for Student and Graduate Nurses and for Those Interested in the Care of the Sick. By Archibald Lee McDonald, M.D., formerly in charge of Department of Anatomy, University of North Dakota, Lecturer on Surgery, Nurses' Training School, St. Lukes Hospital, Duluth, Minn. 265 pages with 46 illustrations. Philadelphia and London: J. B. Lippincott Co., 1919.

The seventy-four chapters give the most common subject in surgery suitable for instruction to nurses. It not only appears to be a very good text book, but the detailed information offers a splendid reference book on surgery for pupil and graduate nurses. A valuable feature of the work is a glossary of terms at the end.

War Surgery of the Face. A Treatise on Plastic Restoration After Facial Injury. By John B. Roberts, A.M., M.D., F.A.C.S., Professor of Surgery, University of Pennsylvania, Graduate School of Medicine,

Lecturer, Civilian School of Plastic and Oral Surgery established in Philadelphia by the Surgeon-General, U. S. A. 442 pages with 256 figures. New York: William Wood & Co., 1919. Cloth, $4.50.

This book is the essence of the lessons taught in plastic surgery of the face by the vast experience furnished by the world war. The three general divisions are: I. Surgical Anatomy of the Face; II. Pathology and Treatment of War Wounds of the Face; and III. Reconstructive Treatment of War Injuries of the Face, and are in turn subdivided into various chapters.

Plastic surgery was one of the most fruitful fields for surgical development during the recent conflict, and is well summarized by Dr. Roberts. The cuts are clear and numerous, and the work as a whole well balanced. The information given applies equally well to industrial surgery.

Practical Home Nursing. An Elementary Condensed Text Book for Trained Attendants. By Louise Henderson, R. N., Director of Trained Attendant Classes, Ballard School, Central Branch Y. W. C. A. of New York. 224 pages, illustrated. New York: The Macmillan Co., 1919. Cloth, $1.50.

This small manual is unusual in that it is a text book for attendants other than regular trained nurses. The need of such a work has been apparent to all physicians, since it commonly happens that the duty of looking after a patient (especially in some chronic condition) devolves upon a person who has not had the advantages of a hospital training. There are twenty-three chapters in all, and they also include emergencies, first-aid and bandaging.

Personal Hygiene and Home Nursing. By Louise C. Lippitt, R. N., Assistant Professor of Corrective Exercises, University of Wisconsin, a Head Reconstruction Aide in Physiotherapy, Medical Department, U. S. Army, Former Instructor, National School of Domestic Arts and Sciences, and Instructor in Training Schools of Garfield Memorial, Providence, Columbia and other Hospitals. Illustrated, 256 pages. Yonkers-on-the-Hudson: World Book Co., 1919. Cloth, $1.28.

This book can be recommended to the laity having to do a certain amount of home nursing, to probationers in nurses' training schools, and to welfare workers. The work is quite elementary, is simply told, contains a great deal of useful, general information, and has some very good illustrations.

OTHER BOOKS RECEIVED

Technic of the Carrel Method. By J. Dumas and Anne Carrel. Authorized Translation by Adrian V. S. Lambert, M.D., Acting Professor of Surgery, College of Physicians and Surgeons (Columbia University), New York, with an introduction by W. W. Keen, M.D., LL.D., F.A.C.S., (Hon.) 90 pages, illustrated. New York: Paul B. Hoeber, 1917. Cloth, $1.25.

A Handbook for School Nurses. By Helen W. Kelly, R. H., Superintendent of Field Nurses, Department of Health, Chicago, Ill., and Mabel C. Bradshaw, R. N., Superintendent of School Nurses, Board of Education, Milwaukee, Wis. 109 pages. New York: The Macmillan Co., 1918. Cloth, $1.00.

Medical Service at the Front. By Lieut.-Col. John McCombe, C. A. M. C., and Capt. A. F. Menzies, M. C., C. A. M. C. 128 pages, illustrated. Philadelphia and New York: Lea & Febiger, 1918. Leather, $1.25.

Reclaiming the Maimed. A Handbook of Physical Therapy. By R. Tait McKenzie, M.D., Major, R. A. M. C., Professor of Physical Therapy, University of Pennsylvania. 128 pages, illustrated. New York: The Macmillan Co., 1918. Leather, $2.00.

Military Surgery of the Zone of the Advance. Medical War Manual No. 7. By George de Tarnowsky, M.D., F.A.C.S., Surgeon to Cook County and Ravenswood Hospital, Chicago; Major M. C., U. S. A.; Am. Exp. Force, France, 1917-1918. 330 pages, illustrated. Philadelphia and New York: Lea & Febiger, 1918. Leather, $1.50.

Johnson's Standard First Aid Manual. Suggestions for Prompt Aid to the Injured in Accident and Emergencies. Edited by Fred B. Kilmer, Lecturer in First Aid; Member of St. John's Ambulance Association, the International Congress of First Aid and Life Savings, the American Public Health Association, the Royal Society of Arts, etc., in Collaboration with Eminent Surgeons, First Aid Authorities and Specialists. Eighth Edition revised. 143 pages, illustrated. New Brunswick: Johnson & Johnson, 1918.

The Surgical Clinics of Chicago. Vol. 2, Number 5, October, 1918. 1088 pages, with 87 illustrations. Philadelphia and London: W. B. Saunders Co., 1918. Published bi-monthly (six numbers a year), $10.00 per annum in paper and $14.00 in cloth.

Vol. 2, Number 6, December, 1918. Index Number. 1292 pages, illustrated. Philadelphia and London: W. B. Saunders Co., 1918. Published bi-monthly (six numbers a year), $10.00 per annum in paper and $14.00 in cloth.

The Medical Clinics of North America. Vol. 2, Number 2, September, 1918. U. S. Army Number. 643 pages, illustrated. Philadelphia and London: W. B. Saunders Co., 1918. Published bi-monthly. Paper, $10.00; cloth, $14.00.

Vol. 2, Number 3, November, 1918. Philadelphia Number. 920 pages, illustrated. Philadelphia and London: W. B. Saunders Co., 1919. Published bi-monthly. Paper, $10.00; cloth, $14.00.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries and Improvements in Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics, Materia Medica and Diagnosis, Jefferson Medical College, Philadelphia. Assisted by Leighton F. Appleman, M.D., Instructor in Therapeutics, Jefferson Medical College, Philadelphia. Vol. xxi, No. 4. December 1, 1918. 414 pages, illustrated. Philadelphia and New York: Lea & Febiger, 1918. $6.00 per annum.

Abstracts of War Surgery. An Abstract of the War Literature of General Surgery that has been published since the Declaration of War in 1914. Prepared by the Division of Surgery, Surgeon General's Office, Washington, D. C. 434 pages. St. Louis: C. V. Mosby Co., 1918. Cloth, $4.00.

Southern Medical News

ALABAMA

Dr. Joseph C. Bloodgood, Baltimore, addressed the Jefferson County Medical Society, Birmingham, at its meeting held during April. Following the address the members of the Society were tendered a buffet supper by Dr. Courtney W. Shropshire, President of the local Society.

Dr. J. R. Bean, recently discharged from the M.R.C., has been appointed Director of Laboratories for Jefferson County and the City of Birmingham. Prior to his service in the Army, Dr. Bean was connected with the laboratory of the Florida State Board of Health.

Dr. James S. McLester, of Birmingham, addressed the Selma High School recently on "Public Health," after which a luncheon was tendered him by the domestic science class of the school.

Dr. William L. Snead, an orthopedic surgeon of New York, addressed the Jefferson County Medical Society at Birmingham in April on "The Injuries of the Elbow Joint."

Dr. H. B. Wilkinson, all-time County Health Officer of Montgomery County, was recently elected City Health Officer to succeed Dr. C. G. Laslie, who resigned. Dr. Wilkinson recently made a request to the County Board of Revenue for an appropriation of $12,000 in addition to the $4,000 already appropriated for carrying out sanitary work in the County. Dr. Wilkinson believes that if proper sanitary provision is not made the Base Hospital at Camp Sheridan, now in the hands of the U. S. Public Health Service, will not be maintained there as a permanent institution.

Dr. Charles V. Romaine (colored), Professor Eye, Ear, Nose and Throat Department of the Maherry Medical College (colored), Nashville, Tenn., traveling under the direction of the United States Government, recently gave an illustrated lecture on the danger of social diseases to the colored doctors of Birmingham, and many of the members of the Jefferson County Medical Society were present.

Dr. J. D. Dowling, City Health Officer, Birmingham, reports that health conditions in Birmingham for March show a big improvement over last year. There were fewer deaths, fewer diseases and an increase in the birth rate.

Deaths

Dr. J. T. Seay, Birmingham, aged 73, died at his home during April.

Dr. Isaac W. Johnston, Nicholsville, died of influenza January 19.

ARKANSAS

Dr. J. B. Strachan, who has recently been discharged from the M.R.C., has resumed his practice in Hot Springs.

Dr. Will Case has begun the practice of medicine at Jamestown after an extended stay in Batesville.

The City Council of Pine Bluff recently reappointed Dr. Fred C. Rowell as City Physician.

The Hot Springs County Medical Society held its election of officers at its meeting on April 24, the results being: President, Dr. E. T. Bramlett; Vice-President, Dr. G. W. Blakley; Secretary-Treasurer, Dr. E. H. McCray; County Health Officer, Dr. W. G. Hodges, whose term of office will be for two years.

Drs. W. R. Orr, C. H. Trotter and J. W. Nichols have been succeeded as representatives on the Board of Governors of the Helena Hospital by Drs. W. C. Russwurm and Aris W. Cox.

Dr. G. L. Henderson, recently discharged from the M.R.C., has again resumed the practice of medicine at his home in Conway.

Dr. Loyd Thompson, Hot Springs, recently discharged from the M.R.C., is attending Wile's Clinic in New York, prior to resuming his practice.

The District Board of Health of Fort Smith has elected Dr. A. A. McKelvey as temporary District Health Officer. The bill authorizing the organization of this position requires that the health officer devote all of his time to the duties of his office and also abolishes the office of City Physician and District Physician. The appointment of Bacteriologist and Sanitary Inspector will be made at a later date.

Dr. J. G. Townsend, Past Assistant Surgeon of the U. S. Public Health Service, St. Louis, Mo., has taken charge of the public health work in Little Rock. He has also taken over the work of the local health department of that city. Lieutenant R. E. Tarbett, Medical Corps, formerly had charge of this work.

Deaths

Dr. Abner H. Cook, Hot Springs, died at his home March 19 following a brief illness of pneumonia.

GEORGIA

At the annual meeting of the Georgia State Medical Association that was held in Atlanta during April the following officers were elected for the year: President, Dr. Edward G. Jones, Atlanta; Vice-Presidents, Drs. W. H. Hendricks, Tifton; J. M. Smith, Valdosta; Delegate to the A. M. A., Dr. A. H. Bunce, Atlanta. Macon was chosen for the 1920 convention, which will meet in March.

The principal speaker at the semi-monthly meeting of the Fulton County Medical Society

on March 21 was Major Frank K. Boland, Chief in Surgery of the Emory Base Hospital Unit, who recently returned from France. Following his talk Dr. Boland presented a picture of the town of Blois, France, to the Society. He also presented the Society with a piece of shell removed from a wounded soldier, who recovered from a complicated shell shot wound operation. This shell is to be made into a gavel for use at meetings of the Society.

Dr. J. R. Garner, Atlanta, Captain, M.C., U. S. Army, who has been Chief Operating Surgeon and Assistant Chief of the surgical service of the U. S. Army Debarkation Hospital No. 5, New York, has been appointed Chief of Surgical Service, Post Hospital, Army Supply Base, Brooklyn, N. Y.

A budget committee recently visited Augusta to make an official inspection of the Medical Department of the University of Georgia. It is understood that the Budget Commission holds that the Medical School should prepare men to assist in the operation of the State Tuberculosis Sanitarium at Alto, while Dr. T. F. Abercrombie, State Health Officer, is anxious for the School to prepare men for health officers in various sections of the State.

At a meeting of the Lowndes County Medical Society on April 8 a committee consisting of Dr. J. M. Smith and Dr. Frank Byrd was appointed to confer with the representatives of Lowndes County in the Georgia Legislature and ask them to introduce a bill to amend the charter of the County so that the people could vote bonds to build a county hospital.

KENTUCKY

The following is a personnel of the new board of the Anti-Tuberculosis Association of Owensboro: Mrs. Henry Berry, President; M. G. Buckner, First Vice-President; Mrs. J. D. Hayes, Second Vice-President; Mrs. John Gilmour, Secretary; Miss Sue Slaughter, Treasurer.

Deaths

Dr. Marcus D. Brown, Hopkinsville, aged 86, died at his home during April following a prolonged illness.

Dr. T. D. Finck, Louisville, died at his home March 22.

LOUISIANA

The Executive Committee of the American Public Health Association has announced that its annual meeting, which was to have been held at New Orleans October 9-12, has been changed to October 27-30.

Dr. L. B. Faulk, Monroe, in active service in the M.R.C. in France, was killed March 24, 1918, while dressing a wounded soldier.

A joint meeting of health officers of Louisiana, Alabama and Mississippi was held in New Orleans on April 12. Harry L. Hopkins, the Director of the Civilian Relief of the American

(Continued on page 26)

DR. WILLIAM KRAUSS

Professor of Bacteriology, College of Medicine, University of Tenn.; formerly Professor of Pathology, and Pathologist to St. Joseph's and City Hospitals, and

DR. C. R. STINGILY

For eight years Director of the Laboratory of Hygiene of the Mississippi State Board of Health, at Jackson, Miss.,
have entered into a co-partnership for conducting a

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For the new firm I pledge faithful and expeditious performance of every task assigned to us; faithful conservation of the interests of the physician of record. William Krauss.

We invite requests for every character of legitimate medical or hygienic work. We are prepared to make field inspections and platings of milk and water for municipalities, investigations of epidemic and medico-legal problems, etc., etc.

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of your aseptic hypodermic syringe—"it" being an S&D hypo-tablet—add a few minims of clean cold or warm water, shake once, perhaps twice, and you have a solution that's limpid, accurate, non-irritating.

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A TRUE LINE

PITMAN-MOORE COMPANY

PHARMACEUTICAL & BIOLOGICAL CHEMISTS

INDIANAPOLIS

(Continued from page 288)

Red Cross, presided as Chairman at the meeting. The subjects of rural health and sanitation, rural education, rural recreation and allied problems of life in the country were discussed.

The Chamber of Commerce of New Orleans recently turned over to Dr. J. H. Lancaster, U. S. Public Health Service, certified copies of recent legislation whereby certain lands below Choctaw Point, between the old and new channels, have been granted to the Government for the purpose of constructing a quarantine station.

MISSISSIPPI

Deaths

Dr. H. D. Gayden, Leland, died while serving in the M.R.C.

MISSOURI

At a reorganization of the Board of Health in St. Joseph, Roy Rush was elected President of the Board and Dr. L. J. Dandurant was elected Vice-President.

The Jackson County Medical Society held its regular monthly meeting in Kansas City during April. Dr. Wright, Professor of Genito-Urinary Surgery of University of Minnesota, addressed the members of the Society.

In behalf of the pending bills that would give greater latitude to the health authorities of the State in combatting diseases, especially tuberculosis, the Missouri Association for the Rellief and Control of Tuberculosis is waging a most active campaign.

The State Senate recently enacted a bill whereby physicians, surgeons and dentists are authorized to form mutual insurance associations for the purpose of protecting themselves against loss resulting from suits filed for alleged malpractice.

Dr. Porter E. Williams, Superintendent of the State Hospital No. 2, tendered his annual dinner to the Buchanan County Medical Society during March.

It is of interest to note from the report of Health Director E. H. Bulloch, Kansas City, that the percentage of contagion of that city was nearly 75 per cent less during February, 1919, than in the corresponding month of the year previous.

Dr. A. W. McAlester has succeeded Dr. W. J. Ferguson, Sedalia, as a member of the State Board of Health.

Deaths

Clayton Keith, Louisiana, aged 72, died at his home April 24 following a brief attack of pneumonia.

Dr. Joseph W. McKee, Kansas City, aged 65, died at his home April 27 following a two weeks' illness of pneumonia.

Dr. A. J. Detweiler, Hannibal, aged 45, committed suicide at the home of his brother-in-law in Columbia during April.

Dr. W. C. Baird, Bogard, aged 80, died at his home following injuries sustained in an automobile accident during April.

(Continued on page 28)

Laboratories of Drs. Bunce and Landham

ATLANTA, GEORGIA

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Director Pathological Dept.

Jackson W. Landham, M.D.
Director X-Ray Dept.

The laboratory of clinical pathology is well equipped for making pathological, bacteriological, serological and chemical examinations for physicians and surgeons. All specimens reported upon the same day received where practicable.

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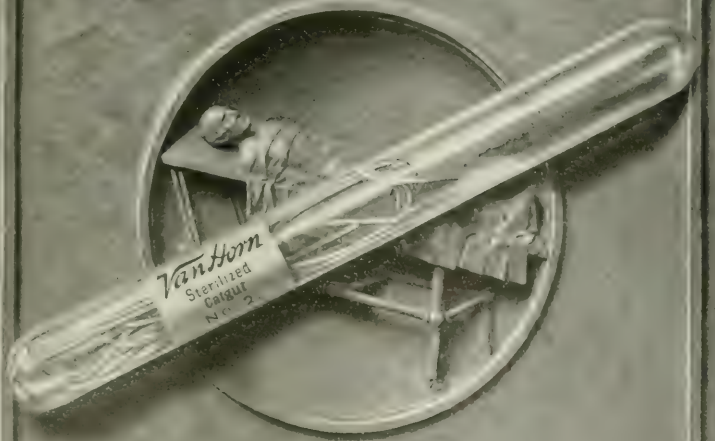

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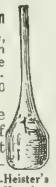

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List on Application **CINCINNATI, OHIO, U. S. A.**

(Continued from page 26)

Dr. Henry S. Atkins, aged 51, St. Louis, after a prolonged illness, died at a hospital in St. Louis recently.

Dr. James M. Scott, aged 83, St. Louis, died at his home recently following an attack of pneumonia.

Dr. Joseph E. Sawtell, Kansas City, died at his home April 4, followed by a brief illness of pneumonia.

Dr. R. D. Shannon, aged 76, formerly of St. Joseph, died in Sedalia during March.

Dr. Marshall W. Crayton, aged 63, Carrollton, died at his home April 6 following a stroke of paralysis.

Dr. J. I. Ellis, Oak Ridge, died during March following a stroke of apoplexy.

Dr. Abraham Branaman, aged 65, Kansas City, died suddenly at his home on April 2.

NORTH CAROLINA

At the annual meeting of the State Medical Association, held at Pinehurst during April, Dr. C. V. Reynolds, Asheville, was elected President of the Association and Dr. F. Stanley Whittaker, Kinston, was elected Vice-President. Charlotte was chosen as the place for the next meeting.

The Mecklenburg County Medical Society held its first meeting in the auditorium of the Carnegie Library, Charlotte, on April 1. The Society voted unanimously to make this the regular meeting place as the Medical Library in the Realty Bldg. did not furnish sufficient room.

OKLAHOMA

At its recent meeting, held at Claremore, the Rogers County Medical Society elected the following officers for 1919: President, Dr. A. H. Haley, Chelsea; Secretary, Dr. F. A. Anderson, Claremore.

Dr. L. E. Pearson, recently discharged from the M.R.C., is making plans to resume his practice at Reed.

The Kay County Medical Society held its May meeting at the Blackwell Hospital, Blackwell. Prior to the literary program the members were served a banquet, with Dr. E. J. Orbis, President of the Society, acting as toastmaster.

Dr. J. O. Hudson, Copan, has recovered from a serious attack of influenza and is again attending to his medical duties.

At its recent meeting in Oklahoma City the Oklahoma Academy of Ophthalmology and Otolaryngology elected the following officers: President, Dr. E. S. Ferguson; Vice-Presidents: Dr. E. S. Davis, Dr. D. D. McHenry; Dr. A. L. Guthrie. The following Board of Directors was chosen: Drs. W. T. Salmon, H. C. Todd, and D. D. McHenry, all of Oklahoma City.

SOUTH CAROLINA

The Governor recently appointed Drs. Baxter Haynes, Spartanburg, and Frank M. Lander, Williamston, as members of the State Board of Medical Examiners.

Dr. C. V. Akin, in charge of the Department

(Continued on page 30)

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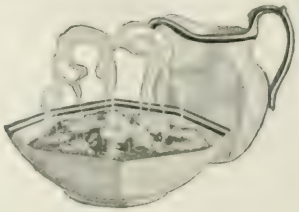

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(3072)

(Continued from page 28)

of Venereal Disease Control of the State Board of Health, was in Florence during April, where he went to make a report on cases of epidemic stupor, or sleeping sickness.

The Spartanburg County Medical Society held its regular monthly meeting March 28. Discussion of the erection of the county hospital was entered into, and it is reported that work on the same will begin at an early date.

TENNESSEE

The West Tennessee Medical and Surgical Association will convene in Dyersburg May 28, 29 and 30 with Dr. L. A. Yarbrough, of Covington, in the chair. Dr. J. A. McSwain, of Paris, is the Secretary.

Dr. Thomas Menees has been discharged from the M.R.C. and will resume his practice in Nashville at an early date.

Dr. F. C. James, Gadsden, was married on May 2 to Miss Mary Humphreys, of Alamo.

The Tri-State Medical Association was in session in Memphis April 10, 11, 12, with Dr. J. H. Barabin, Marianna, Ark., in the chair.

Dr. Robinson Bosworth, of the Minnesota Tuberculosis Commission, has been extended an invitation by the Board of Trustees of the Memphis and Shelby County Tuberculosis Hospital to serve as Medical Adviser during the erection of the Oakville Memorial Tuberculosis Sanatorium.

TEXAS

Dr. Douglas Largen, San Antonio, and Dr. Howard, of Brownwood, are in Wharton preparatory to beginning the Indexical Health Survey work in Texas, having been appointed for this duty by the State Health Department.

Dr. T. H. King, Vernon, has succeeded Dr. D. Berrey, San Antonio, as a member of the Board of Examiners.

The new State Board of Health recently announced the following appointments: Assistant State Health Officer, Dr. Oscar Davis, Anderson; State Registrar of Vital Statistics, Dr. M. E. Parker. Navasota; Bacteriologist, Dr. G. M. Graham; Director of Bureau of Venereal Diseases. Dr. H. C. Hall; Director of Bureau of Rural Sanitation, Dr. P. W. Covington; Dr. T. J. Crowe was elected Vice-Chairman of the Board.

The following members of the new Health Board of Dallas were announced recently: Drs. W. J. Calvert, C. C. Crowe, J. W. Bourland, S. M. Freedman, J. W. Embree, S. L. Scotthorn, J. J. Simmons, C. R. Hannah, J. Utay, A. A. Jackson, J. T. Howard, L. V. Lataste, Miss Mary Reynolds and Mrs. E. P. Turner.

Dr. A. W. Carnes, City Health Officer of Dallas, announces the presence of a number of cases of smallpox in that city, and urges vaccination.

Dr. Rosalie Slaughter Morton, of New York.

(Continued on page 32)

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Detroit, Mich. U.S.A.

(Continued from page 30)

lectured to the students of the State Medical College of Galveston during April.

The three new bureaus have been created in the Department of Health as announced by the State Health Officer. They are the Bureau of Child Hygiene; the Bureau of Public Health Education; and Preventive Medicine.

Dr. O. J. Cook, recently discharged from the M.R.C., after his visit to his home in Laredo, has gone to Portrellos, Chile, where he will become Physician-Surgeon for the Anaconda Copper Company.

The North Texas Medical Association will hold its annual convention in Dallas June 3, 4.

The first convention of the Flight Surgeons Association of the Southwest was held in Dallas the latter part of March. This Association was organized last fall for the purpose of promotion of better co-operation among the different medical officers. Many prominent men from all parts of the United States were in attendance. Nationalization was the principal topic discussed. The next meeting will be held in June at Atlantic City during the convention of the American Medical Association, to effect a permanent organization. The organization will be made national and enlarged in scope to include post surgeons and all medical officers connected with the air service. At the final session the following committee was named on permanent organization to report at the Atlantic City convention: Major John O. McReynolds, Dallas, Chairman; Major James McKee, Philadelphia; Captain David H. Webster, New York; Captain Arthur E. Bridges, New Haven, Connecticut; Captain Frank L. Dennis, Colorado Springs, Colorado.

Deaths

Dr. James Sanders, Beaumont, aged 82, died at his home, following a prolonged illness, April 28.

Dr. Worthy A. Womble, San Antonio, aged 50, after a prolonged illness, died at his home during April.

Dr. J. H. Wilder, until recently in active practice in Bowie County, Arkansas, died in El Paso on April 22, where he had gone to recuperate from a serious illness.

VIRGINIA

Deaths

Dr. Everett P. Turner, Richmond, died suddenly from heart failure at his home on May 2.

WEST VIRGINIA

The Ohio County Medical Society held its meeting during April in the Ohio Valley General Hospital. Dr. Edward Lindeman, of New York City, addressed the Society on the subject of "Blood Transfusion."

The regular semi-annual meeting and conference of the city and county health officers of the State was held in Parkersburg during the latter part of April.

The Little Kanawha and Ohio Valley Medical Society held its regular meeting on April 8 at Parkersburg. One of the most important ques-

(Continued on page 34)

PASTEUR'S ANTI-RABIC VIRUS.

Full Course Treatment **$25.00**

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The treatment is so stable that it can be shipped anywhere and kept any reasonable length of time without loss of immunizing value.

By this method a virus of constant and known potency is used and dosage can be accurately determined.

In a series of experiments made by Poor, Jelneck and Gibson, in the New York City Health Department, it was found that the injection of Harris' dried vaccine resulted in an earlier establishment of immunity than that produced by the old Pasteur method, and that the immunity was at least twice as great.

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(Continued from page 32)

tions discussed was the erection of a new City Hospital.

The Ohio County Medical Society held its meeting on April 2 at Wheeling. The delegates named to attend the State meeting, to be held at Clarksburg on May 20, 21, 22, were Drs. Charles Clovis, M. B. Williams, W. S. Fulton and D. A. MacGregor; Alternates, Drs. R. M. McMillen, Charles H. Keesor, D. B. Best and A. J. Noome.

GENERAL

Dr. George W. Grier, Pittsburgh, Pa., Secretary of the American Roentgen-Ray Society, announces that the twentieth annual meeting of that Society will be held in Saratoga Springs, N. Y., September 3-6.

The thirty-second annual convention of the American Association of Orificial Surgeons will meet in Chicago September 15-17.

The American Public Health Association announces that its annual meeting will be held in New Orleans October 27-30 instead of October 9-12, as previously announced.

The National Tuberculosis Association will hold its annual meeting in Atlantic City June 14-17.

Dr. Collier F. Martin, Philadelphia, Pa., Secretary of the American Proctologic Society, announces that the twentieth annual meeting of that Society will be held in Atlantic City June 7-9.

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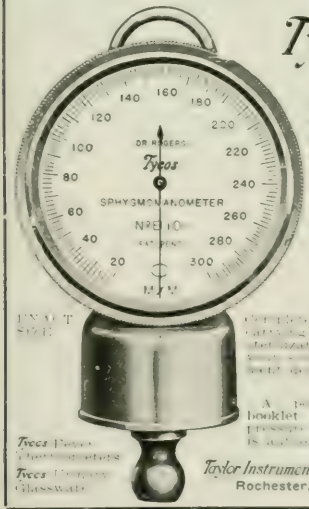

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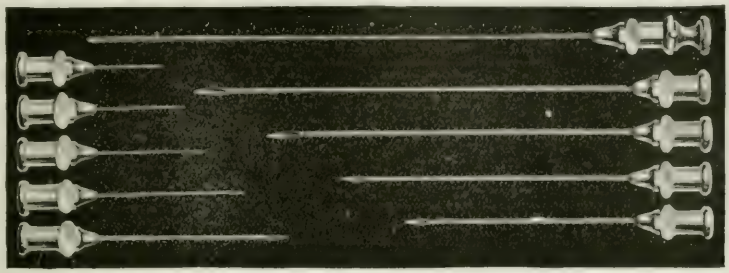

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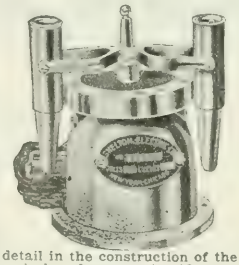

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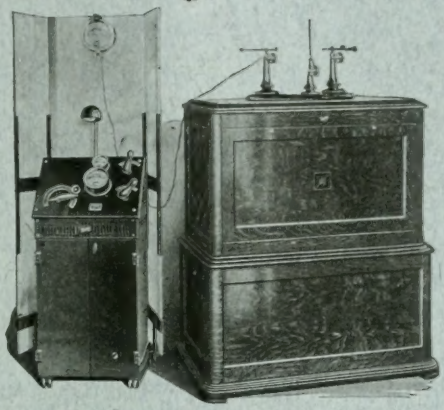

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